ABSTRACT

Title of dissertation:

PSYCHOLOGICAL DISTRESS IN
ADOLESCENTS: THE ROLE OF COPING
RESPONSE AND PERCEIVED EMOTIONAL
SUPPORT

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Adolescence is the developmental period that serves as the bridge between childhood and adulthood. It is a time of rapid physical and psychological growth and provokes changes in social functioning. The adolescent faces increased demands and stress and must learn to successfully and positively adapt to a variety of increasingly complex situations. The purpose of this study was to examine the role of the type of coping and the level of perceived emotional support in mediating the relationship between levels of stress and symptoms of psychological distress.

A secondary data analysis was carried out on data gathered from the administration of a confidential questionnaire (N=889) at an urban high school with a predominantly African-American population (77%). Frequency distributions were used to

place subjects into high and low categories for levels of perceived stress related to school, levels of perceived stress outside of school, symptoms of psychological distress, type of coping and perceived emotional support. Chi-square analyses involving gender, ethnicity and grade level and each of the five variables produced six statistically significant findings ($p < .05$). Levels of perceived stress outside of school differed by gender and grade level, symptoms of psychological distress and level of perceived emotional support differed significantly by gender with females reporting higher levels of both. Problem-focused coping was also associated with gender (more females used problem-focused coping than males) and with grade level (12th graders used more problem-focused coping than all other grade levels).

Subjects were then placed into adjustment groups based upon levels of perceived stress and symptoms of psychological distress. Four adjustment levels were identified ("adapters", "at risk", "positively adjusted" and "negatively adjusted") in an effort to examine differences in the type of coping and level of perceived emotional support used by each group. Chi square analyses were performed with adjustment groups and type of coping and adjustment groups and perceived level of emotional support. No significant relationship was found for either adjustment group with type of coping or with level of perceived emotional support. Possible explanations for the findings were discussed along with recommendations for future research.

PSYCHOLOGICAL DISTRESS IN ADOLESCENTS: THE ROLE OF

COPING RESPONSE AND PERCEIVED EMOTIONAL SUPPORT

by

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DEDICATION

To Francis X. Allen
In Memoriam

ACKNOWLEDGEMENTS

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CHAPTER ONE

INTRODUCTION

Adolescence is the developmental period that serves as the bridge between childhood and adulthood. It involves rapid physical and psychological growth and provokes changes in social functioning. This developmental period also allows for the testing of new behaviors and roles. Relationships with peers and parents undergo change as the adolescent searches to develop his/her own identity. Other developmental tasks faced by the adolescent include the completion of academic requirements, planning for an occupation and the development of a set of personal values (McCubbin et al., 1985). As a result of these changes and tasks, the adolescent faces increased demands and stress, and must learn to cope with a variety of increasingly complex situations. Yet, stress cannot be avoided and is necessary for survival. Behavioral scientists view stress as a condition of everyday living that potentially offers either motivation for growth through positive adjustment or damage if individual coping resources prove ineffective (Zitow, 1992).

Effective coping skills and coping resources such as social support can mitigate potentially harmful effects of stress, however, when coping strategies and resources are inadequate, stressful situations may produce negative physical, cognitive or behavioral outcomes and can lead to the onset of a host of psychological and somatic problems

(Compass, 1987). Therefore, the development of effective skills and resources to cope with stressors is crucial to the successful adaptation of the adolescent. Since effective coping skills and resources are essential, further study in the area of adolescent coping needs to be conducted.

Much of the literature has focused on coping in adults and less attention has been given to coping in adolescents. An analysis performed on publications on coping from 1967 to 1984 found that only about 7% of the studies involved adolescents while 42% involved adults (Seiffge-Krenke, 1995). While there has been an increase in studies over time, given the demands and changes the adolescent may experience, additional attention needs to be given to the identification of effective coping strategies and resources for this age group. One of the most prevalent models in the area of stress and coping research, the problem-focused and emotion-focused model (Lazarus & Folkman, 1984), has been utilized repeatedly in research with adults but has been studied less frequently with adolescent populations. Compass, Malcarne and Fondacaro (1988) found that this model of coping has considerable utility for studying coping processes in younger age groups.

The type of coping response used has been associated with adjustment and findings suggest that problem-focused coping is associated with positive adjustment and fewer symptoms of distress (Billings, & Moos, 1981, Compass, Malcarne & Fondacaro, 1988, DeMaio-Estieves, 1990, Ebata & Moos, 1991, Fields & Prinz, 1997, Prinz, Shermis, & Webb, 1999, Puskar, Hoover & Miewald, 1992). Emotion-focused coping has been associated with poorer adjustment, more distress and more behavior problems

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(Compass, Malcarne, & Fondacaro, 1988,Curry, Miller, Waugh, & Anderson, 1992, Ebata & Moos, 1991,Fields & Prinz, 1997, Hoffman, Levy-Shiff,Sohlberg & Zarizki, 1992, Holahan & Moos, 1985, Recklitis & Noam, 1999, Windle & Windle, 1996).

Social support, the coping resource most consistently mentioned in the literature has also been found to be linked with positive adjustment and has been found to have a negative relationship with psychological distress (Barrera, 1986, Ebata & Moos, 1994, Gore & Aseltine, 1995, Holahan & Moos, 1981, Slavin & Rainer, 1990, Walker & Green, 1987, Yarcheski & Mahon, 1986, Vilhjalmsson, 1994). Social support refers to the positive, potentially health-promoting aspects of relationships such as instrumental aid, emotional concern and information (House, Umberson & Landis, 1988). The "support" component generally includes the providing of information, instrumental aid, or emotional support to a person with the major emphasis on emotional support (Cohen & Wills, 1985). Emotional support, an important aspect of social support, can involve the provision of empathy, caring, love and trust. The evidence for a link between support variables and psychological outcomes seem to be strongest with this component of social support (Slavin & Rainer, 1990). Again, additional research is needed involving adolescents to determine the effects of this coping resource. While many studies suggest a positive relationship between availability of social support and successful adaptation, some studies have shown that support from peers may contribute to health risk behaviors (McCubbin, Needle, & Wilson, 1985, Sieving, Perry & Williams, 2000, Wills, 1986).

Further study is also needed on effective coping skills and the availability of emotional support based upon such factors as gender, age and ethnicity. It would be inappropriate to assume a one-size- fits-all mentality in dealing with stress. Whether the type of coping response and the availability of emotional support differ in dealing with school and non-school related stressors also needs to be examined. This is important since both areas were represented in stressors identified by adolescents and both areas play a major role in the life of the adolescent (Mates & Allison, 1992, Puskar & Lamb, 1991, Siddique & D'Arcy, 1984, Ystgaard, 1996, Zitow, 1992).

BACKGROUND AND RATIONALE

Coping plays a major role in determining the impact of stress on the individual. It is not just the experiencing of excess stress that is harmful but the failure to cope that creates the negative impact (Compass, Orosan & Grant, 1993, Geisthardt & Munsch, 1996). For this reason, there is growing recognition among researchers that successful adaptation may be more influenced by the individual's coping than by the individual's stress (Seiffge-Krenke, 1993). Learning to "cope" is a central developmental task for all age groups but is a task that becomes increasingly important in adolescence with the increased choices, decrease in parental influence and increase in peer pressure. This is also true for the development of coping resources such as social support. As the world of the adolescent broadens, additional stressors are experienced both inside and outside of school and both effective coping strategies and coping resources are necessary to promote successful adaptation during this developmental period.

While many adolescents progress through the transition period adapting successfully, maladaptive coping may exacerbate stress and contribute to long-term, pervasive, negative outcomes (Compass et al, 1993). Adolescence may not be a period of excess stress for every adolescent, however, evidence does exist that for some adolescents it is a period of distress and that ineffective coping can to lead to potentially negative effects on their mental and physical health.   While physical health is of concern, typically adolescents do not experience several of the major chronic physical health conditions seen in adults that have been linked to excess or unmanaged stress. Conditions such as hypertension, heart disease, cancer and other "lifestyle" related diseases are not generally seen in the adolescent population but occur later in life as a result of "wear and tear".

Mental health, however, is an area of increasing concern in the adolescent population due to the increase in the frequency and intensity of psychological distress and the development of further psychopathology such as depressive syndromes and disorders (Compass, Orosan, & Grant, 1993). In their study to analyze the mental health consequences of stress, Siddique and Darcy (1984) found that while the majority of the participants in their study experienced little or mild levels of distress, 27.5% of the participants reported high levels of psychological distress.   While there are differences between depressive symptoms and a diagnosis of depression, ongoing depressive symptoms may lead to continued problems in the future and increase the likelihood of the development of depression (Petersen, Compass, Brooks-Gunn, Stemmler, Ey, & Grant 1993, Pine, Cohen, Gurley, Brook & Ma, 1998). Adolescents are not immune to

depression and this mental health issue has become an area of increasing concern in this age group. Rates of depression increase during adolescence and it has been estimated that the prevalence of depression is more than 6% with 4.9% having major depression (NIMH, 2000). Adolescence can be a critical time for the development of adult psychiatric disorders. The median age at which a person with a mental disorder exhibits first symptoms is sixteen years (Reinherz, Giaconia, Lefkowitz, Pakiz & Frost, 1993).

Both coping skills and social support have been linked with psychological distress and depressive symptoms. Studies involving adolescents have also found that the type of coping may predict symptoms of depression (Compass, Malcarne, & Fondacaro, 1988, Ebata & Moos, 1991, Windle & Windle, 1996). Avoidant coping or emotion-focused coping has been associated with higher levels of distress and depressive symptomalogy (Compass, Malcarne, & Fondacaro, 1988, Coyne, Aldwin, & Lazarus, 1981, Herman-Stahl, Stemmler, Petersen, 1994, Holahan & Moos, 1985). Social support has also been considered as a factor in feelings of psychological distress and symptoms of depression. Generally, lack of perceived social support, unavailability of social support and lower levels of utilization of social support from family and friends seems to contribute to psychological distress.

Gender may also play a role in levels of psychological distress, with females experiencing higher levels of psychological distress than males (Horwitz & White, 1987, Siddique & D"Arcy, 1984). Several studies have found that the increased distress in females may be related to differences in the types of stress experienced and the type of coping strategies utilized (Puskar & Lamb, 1991, Recklitis & Noam, 1999, Stark, Spirito,

Williams, & Guevremont, 1989, Wagner & Compass, 1990, Ystgaard, 1996).

Additionally, it is during adolescence that gender differences in rates of depression become more pronounced; with girls showing increased rates when compared to boys (Broderick, 1998, Ebata & Moos, 1991, Horowitz & White, 1987, McCauley, Carlson, & Calderon, 1991, Reinherz, Giaconia, Lefkowitz, Pakiz, & Frost, 1993, Siddique & D'Arcy, 1984). The gender difference that emerges between twelve and fifteen years of age appears to continue into adulthood (Broderick, 1998, Nolen-Hoeksema, 1994, Petersen, Compass, Brooks-Gunn, Stemmler, Ey & Grant, 1993, Petersen, Sarigiani, & Kennedy, 1991). Previous studies have also shown that the difference in coping responses for adolescent males and females may leave the female at risk for increased feelings of distress and depression. (Billings & Moos, 1981, Groer, et al, 1992, Pearlin & Schooler, 1978, Siddique & Darcy, 1984).

Ethnicity is another factor to be considered and while further study is needed, findings have suggested that black adolescents may experience more persistent depressive symptoms than whites (Garrison, Schluchter, Schoenbach & Kaplan, 1988, Schoenbach, Kaplan, Wagner, Grimson, & Miller, 1983).

Depression has been cited as a predisposing psychological factor that increases the likelihood of adolescent suicide (Andres & Lewinsohn, 1992, Klingman & Hochdorf, 1993, Lewinsohn, Rohde, & Seeley, 1994). Suicide is a major public health issue and the third leading cause of death for adolescents (CDC, 2002). Suicide attempts among adolescents are also of concern due to their frequency, link with physical and

psychological conditions and the increased risk for suicide completion (Spirito, Brown, Overholser, & Fritz, 1989). In a National Longitudinal study on adolescent health, it was found that a total of 10.2% of girls and 7.5% of boys reported having considered suicide over the past year and 5.1% of girls and 2.1% of boys reported suicide attempts (Resnick, et al., 1997). Data from the Youth Risk Behavior Surveillance, a project coordinated by the Center for Disease Control and Prevention, found that 25% of surveyed high school students nationwide seriously considered suicide in the 12 months prior to the survey. Females in every racial and ethnic group and at every grade level were significantly more likely than male students to have considered attempting suicide. Females were also more likely to have made a specific plan or to have attempted suicide. Overall, White students were more likely than Hispanic or Black students to have considered suicide, or to have made a plan (Grunbaum, Kann, Kinchen, Ross, Gowda, Collins & Kolbe, 2000). In another health behavior study, gender differences were again found among 9th and 12th graders, with more girls than boys reporting suicide attempts (Neumark, Story, French, Cassuto, Jacobs, & Resnick, 1996).

In a study designed to determine psychosocial risk factors for future suicide attempts, Lewinsohn, Rhode and Seely (1994) found that among other factors, future suicide attempts were significantly associated with psychopathology such as depression, inadequate coping skills, low perceived social support from family and recent suicide attempt by a friend.   Spirito, Overholser and Lark (1989) found in their study comparing adolescent suicide and non- suicide attempters that coping skills used in response to stressful events may serve as mediating variables in suicide attempts. Similar events

occurred in both groups but only resulted in a suicidal attempt in one group. The only difference found between the two groups was in the use of type of coping skills. The suicidal group used more social withdrawal and wishful thinking than the non-suicidal group.

Depression or depressive symptomology can also affect the physical health of adolescents by resulting in an increase in somatic health complaints (Herman & Lester, 1994, Eiser, Havermanns & Eiser, 1995, McCauley, Carlson & Calderon, 1991). Adolescents with psychosomatic symptoms account for approximately 5-10% of all pediatric patients (Brown, 1992). Somatic symptoms of stress may also exist in adolescents in the absence of depressive symptomology and may be a manifestation of inadequate coping skills and resources. Brack, Brack and Orr (1996) found that adolescents who do not have positive coping skills and resources may be more likely to internalize their stress as depression, anxiety, psychosomatic complaints and weight problems.

Several other adolescent health issues in the United States have also been linked with psychological distress. Both psychological distress and increased stress have been related to substance use (Cerbone & Larison, 2000, Frydenberg & Lewis, 1993, Piko, 2000, Wills, 1986). Hoffmann, Cerbone & Su, (2000) utilized a growth curve model and found that as stressful life events increased, there was a significant escalation of drug use. Byrne, et al. (1995) found that stress was not simply associated with present smoking behavior but also associated with the onset of smoking. The frequency and intensity of

drinking has also been linked with life stress and the quality of social relationships, including the frequency of arguments with parents (Aseltine & Gore, 2000). Findings from a study conducted by Wills (1986) suggest that the function of regulating negative affect or psychological distress is a motive for the use of substances in adolescence.   In a longitudinal study on the escalation of substance use, a combination of factors, which included greater life stress, lower parental support, more deviant attitudes, more maladaptive coping, and greater affiliation with peers who use substances were found to be related to higher risk (Wills, McNamara, Vaccaro, & Hirky, 1996).

The type of coping utilized may also contribute to the increased use of substances such as cigarettes and alcohol by adolescents (Wills, 1986). Avoidance coping has been linked with increased substance use and active/problem-focused coping with decreased substance use (Frone & Windle, 1997, Wagner, Myers & McIninch, 1999). Avoidance coping refers to efforts to avoid actively confronting the problem or to decrease tension by behaviors such as eating more or smoking (Billings & Moos, 1981).

Social support may play a somewhat different role in the initiation of health behavior and while social support has generally been found to buffer or reduce stress, it also may be that close friendships and peer relationships may be a source of pressure and contribute to poor health behaviors. Support of close friends can be complementary of adolescent health risk behaviors (Lifrak, McKay, Rostain, Alterman, & O'Brien, 1997, McCubbin, Needle, & Wilson, 1985, Sieving, Perry & Williams, 2000, Wills, 1986). Positive family support, however, can protect against substance use and Hoffman,

Cerbone, & Su (2000) found that strong family attachment could moderate the effects of both life stress and peer drug use on the escalation of drug use for adolescents. Support from teachers can also play a role and a study done by Lifrak, McKay, Rostain, Alterman & O'Brien (1997) found that increased teacher support was associated with less alcohol, cigarette and marijuana use in boys.

An additional area of concern involves sexual activity, especially sexual intercourse, among adolescents. Data from the Youth Risk Behavior Surveillance in 1999 showed that 49.9% of the high school participants had sexual intercourse and 16. 2% had four or more partners (CDC, 1999). Overall, black students (72.7%) were significantly more likely than Hispanic (52.2%) and white (43.6%) students to have had sexual intercourse. Among male and female students, grade 12 students were significantly more likely to have had sexual intercourse than grade 9 or 10 students (CDC, 1999). Sexual behavior has also been associated with feelings of excess stress and psychological distress. In an analysis of factors associated with adolescents engaging in sexual intercourse, Harvey and Spigner (1995) found that while alcohol consumption is the strongest predictor of sexual intercourse, stress was a significant predictor for both males and females. In their study, males and females engaging in sexual intercourse also reported higher levels of stress and depressive symptomatology. Adolescents engaged in sexual intercourse may be at risk for other health issues such as teenage pregnancy and the potential for acquiring a sexually transmitted infection due to unprotected sexual activity.

For the adolescent, excess levels of stress may interfere with health maintenance and may promote coping behaviors that are incompatible with the maintenance of health (Jessor, Turbin & Costa, 1998). Failure to address the perceived stress of adolescents and assist this age group with the development of productive coping strategies and resources will continue to leave adolescents at risk for a variety of health concerns and may be setting the stage for continued stress-related problems in the future.

PURPOSE OF THE STUDY

The purpose of the study was to evaluate the relationship between coping responses, perceived emotional support and mental health related outcomes. The study was exploratory in nature and attempted to ascertain if demographic variables such as gender, ethnicity, and grade predicted the predominant type of coping response utilized, the perceived availability of emotional support, differences in levels of perceived stress both in and out of school and differences in symptoms of psychological distress. The analysis then focused on determining the differences in coping responses and perceived social support among adolescents with high or low levels of perceived stress and with high or low levels of self-reported psychological distress. The analysis occurred examining levels of perceived stress both in and out of school.

Since every adolescent does not experience excess stress during adolescence, this study attempted to identify factors that may differ among those who positively adapt and those adolescents who may be at risk and more likely to suffer high levels of perceived stress and symptoms of psychological distress. Garrison, Schlucter, Schoenbach & Kaplan (1989) found that high depressive symptomology does not seem to be a universal

adolescent experience but rather affects a subset of adolescents. The role of gender, grade and ethnicity was also explored since the data has suggested that differences exist based upon these three factors (Ebata & Moss, 1991, Garrison, Jackson, Marstellaer, McKeown & Addy, 1990, Garrison, Schlucter, Schoenbach & Kaplan, 1989, Hirsch & Rapkin, 1987, McCauley, Carlson, & Calderon, 1991, Reinherz, Giaconia, Lefkowitz, Pakiz, & Frost, 1993).

The investigation utilized data collected as part of a cross-sectional study carried out in the Spring of 1996 at a large urban high school. Secondary data analysis was performed on the data collected as a result of the completion of a confidential questionnaire. The data for this study was originally collected as part of a study to identify student stressors that may be related to negative health outcomes. The study was based upon a theoretical model adapted from the work stress model used by the National Institute of Occupational Safety and Health (NIOSH). In the original model, job stressors refer to conditions that lead to strain in the worker and show in physiological and behavioral responses. The responses to the stressors are presumed to have an effect on long-term measures of physical and mental health. Three additional components are included in the model: buffer factors, non-work factors and individual factors (Hurrell & McLaney, 1988). The original model was adapted to create a parallel between the adult world of work and the school environment of the student. The model was also expanded to encompass non-school related stressors. A diagram of the model is found in Figure 1.

The model incorporates the school and non-school stressors experienced, the perception of stress and the factors that influence student life stress, such as coping, social support and demographic and psychosocial factors (e.g. risk taking personality),

Figure 1: School Stress Model

Study Design
Theoretical Model

Stressors
Non-School:
Sexual Activity
Responsibilities
Family Life
Physical Health
Social Stressors

School Related:
School
Environment
Social Stressors
Peer Pressure
Security

Coping   Social Support

Student
Life
Stress

Heath Outcomes

Behavioral

Physiological

Psychological

Demographic & Psychosocial Factors
(e.g. Risk-Taking Personality)
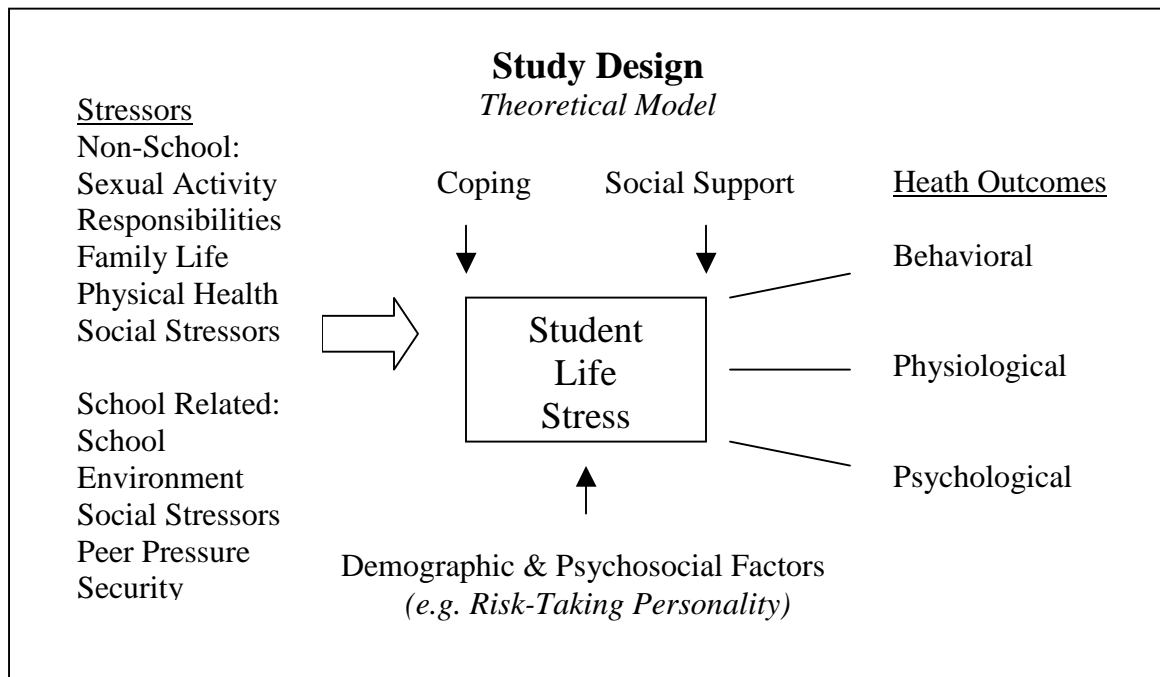
and behavioral, physiological and psychological health outcomes. Coping and social support are viewed as factors (along with demographic and psychosocial factors) that moderate or mediate the effects of school and non-school related stressors on health outcomes.

HYPOTHESES

The following hypotheses were tested in this investigation:

High stress, low symptom adolescents will report greater utilization of problem- focused coping and higher levels of perceived emotional support than high stress, high symptom adolescents.

High stress, high symptom adolescents will report greater utilization of emotion-focused coping and lower levels of perceived emotional support than high stress, low symptom adolescents

Low stress, high symptom adolescents will report greater utilization of emotion-focused coping and lower levels of perceived emotional support than high stress, low symptom adolescents

Low stress, low symptom adolescents will report greater utilization of problem-focused coping and higher levels of perceived emotional support than low stress, high symptom adolescents

RESEARCH QUESTIONS

In addition to answering the hypotheses, the study examined the relationship of gender, ethnicity and grade to the type of coping response, level of perceived emotional support, level of perceived stress and level of symptoms of psychological distress experienced by these adolescents.

SIGNIFICANCE OF STUDY TO HEALTH EDUCATION

The additional knowledge gained from study in this area can be utilized in health education programs. Coping strategies can be learned and coping resources can be developed over time. While distressing, stressful events can be used as a learning tool and lead to an enhancement of coping skills. Studies focused on psychopathology are helpful; it is also necessary to place an emphasis on constructive actions and resources in the face of challenges (Holahan, Moos & Schaefer, 1996). All students can benefit from this knowledge. Developing these programs could also serve to reduce the adolescents' initiation and maintenance of health risk behaviors (McCubbin, Needle, & Wilson, 1985).

While training in coping skills and resources may be helpful for all adolescents, it is also important for adolescents that may be identified as experiencing psychological

distress. The belief that adolescence is a time of storm and stress for all has hindered the

research on adolescence disturbance and coping (Offer & Schonert-Reichl, 1992). Yet,

Dubow, Lovko, & Kausch (1990) found there are clear indications that some adolescents

are more at risk than others. A better understanding of the factors that may contribute to

or protect against psychological distress (including depression) is important for the

planning of services, for the allocation of resources and for launching effective primary

and secondary prevention efforts (Fleming & Offord, 1990, Petersen, Compass, Brooks-

Gunn, Stemmler, Ey & Grant, 1993). The role of school and health professionals is also

important in the identification of adolescents at high risk of experiencing psychological

distress during the school years because these youth are at an age where self-referral for

problems may not occur. Dwindling resources must rely on the identification and

prevention of future problems in high- risk students (Reinherz, Giaconia, Lefkowitz, &

Frost, 1993).

SCOPE AND DELIMITATIONS OF THE STUDY

Several issues limited this study. First, the study is based upon a secondary data

analysis therefore the analysis is limited to the measures used as part of the original

survey. Second, the study was cross-sectional in design, so measurement occurred at only

one point in time. Third, the study relied on self-report; however while self-ratings may

lead to distorted responses, evidence for this assumption is limited and self-ratings have

been shown to be equal to or superior to other types of assessments in predicting a wide

range of criteria (Kidder & Judd, 1986). Fourth, participants level of perceived emotional

support was measured, not the actual emotional support received. Finally, the study may

be limited by selection bias since the survey was distributed and completed in one day and did not include the students who were absent. It could be that the "hardy" students were present and the students with higher levels of psychological distress were not present. The difference between responders and non-responders are not known.

DEFINITION OF TERMS

Coping: The continually changing behavioral and cognitive efforts to manage external and/or internal demands that are appraised by the individual as exceeding his/her resources (Lazarus & Folkman, 1984)

Coping Response: An effortful response by the individual that is intended to address two main functions labeled problem-focused and emotion-focused coping.

Emotion-Focused Coping: a type of coping which includes behavioral or cognitive responses whose function is to regulate the emotional states associated with or resulting from the stress and maintain emotional equilibrium (Lazarus & Folkman, 1984).

Problem-Focused coping: A type of coping that includes cognitive or behavioral responses whose function is to deal with or alter the problem causing the distress (Lazarus & Folkman, 1984).

Perceived Level of Stress: The level of stress as perceived by the individual and involves an appraisal by the individual rather than a measure of actual life events.

Perceived Emotional Support: The cognitive appraisal of being reliably connected to others and that support would be available if needed (Barrera, 1986). The individual seeking emotional support would be able to share emotions and feel they could talk to the provider of the support.

Psychological Distress: A broad category that includes symptoms of distressed mood and other depressive phenomena. May include symptoms of depression, anxiety, social dysfunction, and psychosomatic symptoms.

Social Support: The positive, potentially health promoting or stress buffering aspects of relationships such as instrumental aid, emotional caring or concern and information (House, Umberson & Landis, 1988).

Stress: any event in which environmental demands, internal demands or both tax or exceed the adaptive resources of an individual (Folkman, Lazarus, Gruen & DeLongis, 1986).

SUMMARY

This chapter has provided the background and rationale for the study and introduced the concepts of coping and social support. The theoretical model that served as the basis for the study and the purpose of the study was also provided along with the relevance to health education. Finally, limitations of the study were identified and relevant terms were defined.

CHAPTER TWO

REVIEW OF THE LITERATURE

INTRODUCTION

Adolescence has been defined as "a period of personal development during which a young person must establish a personal sense of individual identity and feelings of self-worth which include an alteration of his her body image, adaptation to more mature intellectual abilities, adjustments to society's demands for behavioral maturity, internalizing a personal value system and preparing for adult roles"(Ingersoll, 1989 p.91). Important tasks need to be accomplished yet it is a somewhat confusing process since there are no set rules on how to proceed and no method for knowing when the transition into adulthood has been accomplished (Hotaling, Atwell, & Linsky (1978). Adolescence may be seen as a period of "storm and stress" and myths associated with adolescence see many adolescents as troubled, fighting with their families and out of control due to emotions and hormones (Offer & Schonert-Reichl, 1992). New findings indicate that this period can be experienced without excess turmoil and strife for many adolescents, however stress and strain will affect a significant minority of adolescents (Arnett, 1999, Offert & Schonert-Reichl, 1992, Siddique & Darcy, 1984). For this reason, there is a need to understand the characteristics and/or skills of those who move through adolescence with a healthy sense of challenge and growth and those adolescents who experience distress.

Stress is an essential part of life and necessary for growth and survival. No age group is immune from stress and must face the new challenges and demands presented. Adolescents cannot be protected from stress and there is some evidence that adolescents shielded from "the manageable adversities that facilitate the development of coping capacities have more difficulties in adult life" (Mechanic, 1983, p. 11).). Stresses and strains encountered by the adolescent come from all aspects of their life including personal, family, social and academic environments. According to a study performed by Zitow (1992), the twenty most stressful events as ranked by adolescents involved all four of the above areas. Top stressors included such items as "death of a parent, being responsible for an unwanted pregnancy, being suspended from school, having parents that are separated or divorced, getting a D or F on a test, being teased or made fun of, feeling guilty about things I have done in the past, pressure from friends to use drugs or alcohol, and feeling anxiousness or general tension" (p22).

Puskar and Lamb (1991) found that the events with the greatest frequency were breaking up with boyfriend or girlfriend, increases in the number of arguments with parents and changes in relationships with friends. As part of a longitudinal study on stress and coping, conducted by Groer, Thomas & Shoffner (1992) student stressors were measured at two points, once as freshman and once as seniors. At both points, hassling with parents, hassling with sibling, and making new friends were in the top five stressors. Ystgarrd (1996) found that academic stresses are of the most importance while Siddique and Darcy (1984) found that family stress is of central importance in the mental health of adolescents. Dornbusch, Mont-Reynaud, Ritter, Chen & Steinberg (2000) also supported

the importance of family stress; however, they also found that males and females showed a greater sensitivity to personal stressors. While it seems that agreement may not exist in the literature on the relative importance of each of the four areas, it does support that all of the areas are important.

Many researchers break the type of stresses experienced into two major categories. The categories include major life events (acute discrete events) and hassles, the chronic everyday problems of life (Mates & Allison, 1992). Past studies have focused predominantly on major life events (primarily negative events) however; this may not be an appropriate measure of stress in the life of the adolescent. Measures of the more stressful experiences of daily living (e.g. hassles) must be added (Seiffge-Krenke, 1995). In studies examining the effects of hassles and major life events, both have been found to be important and to affect adolescent adjustment. Rowlinson & Felner (1988) found that while major life events were a significant predictor of maladjustment across a number of domains, hassles were found to be a significant and independent predictor of outcome over and above life events. Seiffge-Krenke (1995) and Printz, Shermis and Webb (1999) found that minor events were more strongly related to distress than major events and their findings suggest that adolescent stress is influenced less by major events than by chronic stressors.

While efforts have been made by researchers to quantify the level of stress based upon number of life events and hassles, the experience of "stress" is subjective and based upon the appraisal by the individual. Stress refers to "any event in which the

environmental demands, internal demands or both tax or exceed the adaptive resources of

an individual, social system or tissue system" (Monet & Lazarus, 1985, p.3). The

individual cognitively appraises what is at stake (primary appraisal) and what coping

resources are available (secondary appraisal) and the degree to which a person feels stress

is defined by both appraisals (Folkman & Lazarus, 1980).

The amount of stress experienced by the adolescent is important and higher levels

of stress are more likely to contribute to adjustment issues. Dornbusch, Mont-Reyanaud,

Ritter, Chen & Steinberg, (2000) found that adolescents reporting more stressful events

have more negative outcomes and youth with high stress reported more symptoms, lower

grades and higher deviance than those with low stress. D'Imperio, Dubow & Ippolito

(2000) reported that high stress participants in their study were four times more likely to

be clinically anxious or distressed than low stress participants. It seems an accumulation

of stressful experiences increase ones vulnerability to maladjustment (Printz, Shermis &

Webb, 1999) and the natural stressors of change along with added stressors such as

divorce created a less positive view of life (Jew & Green, 1998).

There are differences by gender, age and ethnicity as well. Females report more

stressful events than males (Dornbusch, Mont-Reyanaud, Ritter, Chen & Steinberg, 2000,

Groer, Thomas & Shoffner, 1992, Siddique & Darcy, 1984, Ystgaard, 1996), and

differences seem to exist in the categories of stressors experienced by each gender. Stark,

Spirito, Williams & Guevremont (1989) found that males reported more school-related

problems and several studies have found that female adolescent report more interpersonal

or relationship related stressors (Groer, Thomas, & Shoffner, 1992, Halstead, Johnson & Cunningham, 1993, Siddique & Darcy, 1984, Seiffge-Krenke, 1995, Stark, Spirito, Williams & Guevremont 1989, Ystgaard, 1996). Findings by Seiffge-Krenke (1995) in several studies showed that females had more relationship and identity stressors and felt more threatened by events than males.

In terms of age, Seiffge-Krenke (1995) found few differences but did find that early adolescents perceived greater stress. Stark, Spirito, Williams and Guevremont (1989) found that males and females in the 16-17 year old age group reported different problems than those in the 14-15 year old age group. The problems reported by the younger group were more focused on parents or school while the problems reported by the older students were more diverse showing an increase in future issues. In a longitudinal study of stress and coping in high school students, that measured subjects in both freshman and senior years, Gorer, Thomas & Shoffner (1992) found that for both males and females, stress increased over time. While studies are too few in number for African-American adolescents, Dornbusch, Mont-Reyanaud, Ritter, Chen & Steinberg (2000) found that among black adolescents, both males and females reported more stressful events. This finding was also supported by Weist, Freedman, Paskewitz, Proescher, & Flaherty (1995) who found that African-American students reported more negative life events than Caucasian students.

If both life events and hassles are part of life, then the study of constructs that can ameliorate or address the difficult aspects of both should be valuable. Research that seeks to determine the stresses one age group faces is helpful but it defines the problems, not

possible solutions. It does not take into account protective resources or skills that can

buffer the effects of stress and limit negative outcomes. If effective and adaptive coping

is one of the major goals for adolescents, the focus must be on determining factors that

contribute to this goal.

The theoretical model for this study found in Chapter one (Figure1) includes

several factors that are believed to affect the relationship between the stresses

experienced by adolescents and health related outcomes. Coping and social support are

two major factors included in the model that affect the relationship between stress and

health outcomes. The role of these two factors is a focus of this study. The school stress

model also recognizes the possible role of demographic factors and this investigation will

explore gender, ethnicity and grade level to determine the possible effect on type of

coping, perceived emotional support and psychological health outcomes in adolescents.

While the model includes behavioral, physiological and psychological health outcomes,

the primary outcome measure for this investigation is defined as "psychological distress".

The definition and importance of this outcome measure will be discussed later in the

review.

Each of the factors mentioned above will be explored in the literature review and

findings from previous studies will be discussed. Information on the factors that are

applicable to this investigation will be presented in order to provide the necessary

background and rationale for the development of the study. First, information on coping

will be introduced and will include a definition and a description of the coping model

utilized for this research. Studies related to the model will be presented and the role of

gender, age and ethnicity will be explored. Next, social support with an emphasis on

emotional support will be addressed and will follow the format outlined for coping.

Finally, psychological distress will be examined and will include a discussion of the role

of gender, age and ethnicity along with findings from studies on psychological distress

and the relationship with both coping and social support.

THE CONCEPT OF COPING

There has been growing recognition that while stress is an inevitable part of life, it

is coping that makes the difference in adaptation and therefore the emphasis has begun to

shift from stress to coping (Seiffge-Krenke 1993). Coping processes are central to stress

resistance and it seems it is not the experience of stress that is harmful rather it is the

failure to cope adequately with stress that creates negative impact (Geisthardt & Munsch,

1996, Holahan, Moos & Schaefer, 1996).

The term "coping" has been broadly defined by Pearlin and Schooler (1978) "as

the things people do to avoid being harmed by life strains"(p.2) and coping becomes

necessary when the individual determines that an event is stressful. Lazarus and Folkman

(1984) further defined coping "as the 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" (P.141). According to Lazarus & Folkman (1984)

coping is an "effortful" response by the individual and the response is intended to address

two main functions. These functions include dealing with or altering the problem causing

the distress (problem-focused coping) and/or the regulation of stressful emotions

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(emotion-focused coping) (Billings & Moos, 1981, Lazarus & Folkman, 1980, Lazarus & Folkman, 1984, Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986, Folkman, Lazarus, Gruen, DeLongis, 1986).

The problem-focused, emotion-focused model is part of a widely recognized and utilized model and is based on cognitive-phenomenological theory, which proposes that coping efforts are a response to cognitive appraisals made by the individual. Appraisals include a *primary appraisal* that determines what is at stake and a *secondary appraisal* to determine what resources or options are available to deal with the situation. Primary appraisals focus on perceptions of threat, harm-loss or challenge and may influence the type of coping response that is utilized. However, appraisal and coping continuously interact and changes in one influence the other. This reciprocal process may create *reappraisals* that in turn can promote additional coping efforts. Reappraisal is a feedback system and coping can change as the process unfolds (Folkman & Lazarus, 1980). Consistent with the transactional perspective, coping alters the person-environment relationship (Seiffge-Krenke, 1995). Effective coping may not only mediate potential negative effects of stress on the individual but may lead to a decrease in the appraisal of events as stressful (Mates & Allison, 1992).

Coping involves all purposeful attempts to manage stress and is not limited to successful efforts. Coping strategies refer to the cognitive or behavioral actions taken in response to a particular stressful event. Coping style, unlike coping strategies are methods of coping that characterize and individual's reaction to stress across different situations

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(Compass, 1987). Coping styles have come to represent the strategies that are used more

consistently by the individual and can be a generalized strategy or a habitual preference

for responding to problems regardless of their nature (Frydenberg, 1997, Patterson &

McCubbin, 1987) Evidence seems to suggest that how people cope in response to a new

situation appears to be related to how they coped in the past (Terry, 1994). Lazarus &

Folkman's (1984) definition of coping as constantly changing cognitive and behavioral

efforts to manage specific external and internal demands seems to suggest that coping is

rarely stable. Yet, they do not argue that there is no stability in coping or that people do

not have preferred modes of coping with similar types of stress over time. According to

Folkman, Lazarus, Gruen & DeLongis (1986) research suggests that coping across

different types of situations is more variable than stable yet there must be some stability

due to factors related to the person or to similar environments.

Both problem-focused and emotion-focused coping can be carried out through

cognitive or behavioral methods and both functions of coping are important for successful

adaptation to stress (Boekarts 1996, Compass, 1987). Coping responses may vary

depending upon the situation (Olah 1995, Stern & Zevon, 1990) and in this model coping is

contextual and viewed as a response to specific stressful situations rather than as a stable

feature of personality (Holahan, Moos & Schaefer, 1994). Studies have found that problem-

focused coping is more likely to be used in situations appraised as controllable and

challenging and emotion-focused coping more likely to be used in situations involving

perceptions of threat, harm-loss, or uncontrollability (Ebata & Moos, 1994, Folkman,

Lazarus, Dunkel-Schetter, DeLongis & Gruen 1986, Lazarus & Folkman, 1984). Emotion-

focused coping can facilitate problem-focused coping if the response is used to manage

emotions that would otherwise interfere with problem-focused strategies (Folkman &

Lazarus, 1985).

While different types of coping may be used in different types of situations,

individuals flexible in coping choices may better adjust than those that are rigid in their

coping repertoire (Compass, 1987, Holahan, Moos & Schaefer, 1996, Lazarus & Folkman,

1984). A coping strategy that may initially be beneficial may become maladaptive if

continued and a flexible shift in coping is necessary according to changing demands for

successful coping (Seiffge-Krenke, 1995). Pearlin & Schooler (1978) found that no one

single coping response is most effective and what was most effective was a variety of

responses. Additionally, coping needs to be defined independently of outcome and all

efforts to manage stress regardless of outcome need to be included in coping definitions.

Only its effects in a given situation and its effect in the long run determine the efficacy of a

strategy (Compass, 1987, Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen, 1986,

Lazarus & Folkman, 1984).

Stress level may play a role in the type of coping response with several studies

showing that higher levels of stress are associated with more emotion-focused coping. It

may be that emotion focused coping is necessary to first control or regulate the emotional

response so that problem focused coping strategies can then be utilized. As stress levels

increase, cognitive processes may be less effective and the initial need is on the

management of emotions. Emotion-focused modes of coping can facilitate problem-

focused coping if the strategies are used to manage emotions that may interfere with

problem-focused coping (Folkman & Lazarus, 1985). DeMaio-Estieves (1990) found in a sample of adolescent girls, that the results suggested as stress increases the individual's ability to perform cognitive problem-focused coping decreases and the reliance on emotion- focused coping increases. This finding however was not consistent with a study conducted by Terry (1994) using a three wave longitudinal design with first year college students. The level of appraised stress was not predictive of the type of coping used and there was no support for the assertion that high levels of stress would engender the use of emotion-focused coping.

While both forms of coping are necessary, several studies have found that problem-focused coping is associated with more successful outcomes and positive adjustment (Ebata & Moos, 1991, Ebata & Moos, 1994, Fields & Prinz, 1997, Hoffman, Levy-Schiff, Sohlberg & Zarizki, 1992, Printz, Shermis, Webb, 1999, Windle & Windle, 1996). According to Herman-Stahl, Stemmler & Petersen, (1995), it is the presence of problem-focused methods that that is linked to adjustment, not just the absence of emotion-focused coping. Taking some form of action helps to enhance feelings of personal control and lead to further coping efforts. Emotion-focused coping on the other hand has been found in several studies to be associated with increased feelings of distress and negative adjustment (Curry, Miller, Waugh & Anderson, 1992, Ebata & Moos, 1994, Hoffman, Levy-shiff, Sohlberg & Zarizki, 1992, Parker, Hoover, & Miewald, 1992 Windle & Windle, 1996).

Gender and Coping

Gender differences in the type of coping used have been found and several studies support that females are more likely to use emotion- focused coping, and more likely to use social support as a coping strategy than are males (Blanchard-Fields, Sulsky, Robinson-Whelan, 1991, Frydenberg & Lewis, 1991, Olah, 1995, Phelps & Jarvis, 1994, Recklitis & Noam, 1999, Seiffge-Krenke & Shulman, 1990, Windle & Windle 1996). Other studies have not supported that females use more emotion-focused coping and instead have found that females use the same or more problem-focused coping than males (Ebata & Moos, 1991, Ebata & Moos, 1994, Herman-Stahl, Stemmler & Petersen, 1995, Jorgensen & Dusek, 1990, Pollard, 1993, Seiffge-Krenke, 1993). It seems that gender differences exist more in the use of emotion- focused coping than in the use of problem-focused coping but findings on gender have not been consistent in terms of the type of coping. For example, Frydenberg & Lewis (1991) found that females are more fatalistic and resigned to circumstances than are males and girls use more wishful thinking and seeking social support than do boys. They found that in spite of a wish for things to be different, girls use as much problem-focused coping as do males. In a later study, the same researchers found that girls generally used more seeking social support, wishful thinking and tension reduction strategies than boys and that non-productive strategies are used more by females than by males (Frydenberg &Lewis, 1993).

It may be that females differ in other ways such in the type of stressor, in the use of social support or in the action taken in response to a situation. Seiffge-Krenke (1995) found that female adolescents had higher scores on both active coping and withdrawal but were

caught in a special dilemma. They were more stressed than boys by same event (interpersonal conflict with significant other) but most often applied coping strategies that required the use of these same social relations. Ebata & Moos (1994) found that females used more logical analysis, positive reappraisal, guidance, support and emotional discharge but logical analysis was for the most part correlated with just thinking about a problem not with action.

Not all studies have found significant gender differences in the types of coping utilized by males and female adolescents (Compass, Malcarne & Fondacaro, 1988, Groer, Thomas & Shoffner, 1992, Munsch & Wampler, 1992). Blanchard-Fields, Sulsky, Robinson-Whelan (1991) suggest that this may be related to the measuring of gender rather than sex role orientation. Their study suggests that sex role orientation may be a better predictor of coping than gender and individuals high in femininity prefer emotion-focused coping. This finding only held true from adolescence to middle age. An additional finding of interest was that females in their study showed more diversity in their coping repertoire than did males. Findings from Patterson & McCubbin (1987) supported this view and found that females had more frequent use of a broader range of coping patterns. These findings would seem to suggest a possible advantage for females since previous results indicate that individuals flexible in their coping choices may show better adjustment than those more rigid in their responses (Compass, 1987, Holahan, Moos & Schaefer, 1996, Lazarus & Folkman, 1984).

Ethnicity and Coping

Fewer studies exist that examine differences in coping based upon ethnicity. Little

research exists with minority youth and a focus on development (Phinney & Chavira, 1995).

Empirical studies that look at specific areas of healthy functioning for both male and female

adolescents is needed and further understanding is needed about black adolescents coping

methods (Rosella & Albrecht, 1993). While more studies are needed; several studies that

have been conducted provide useful information and are discussed in this section.

In their study of high school students, Halstead, Johnson & Cunningham (1993) found

that African- American adolescents used more coping responses than did Caucasian

adolescents and were more likely to appraise situations as something that could be changed.

They also found that African-American females used more social support and wishful

thinking than males. Weist, Freedman, Paskewitz, Proescher, & Flaherty (1995) found in

their study of predominantly African-American high school students (82%) that problem

focused coping was found to be protective but only for African American girls. Pollard's

(1993) findings also related to African-American females and problem solving and found

contrary to studies involving Caucasian students, female African-American students engaged

in more active problem solving than did male African American students.

Age and Coping

Age and developmental level play a role in coping. The emergence of formal

operational thinking in adolescence may assist adolescents in choosing effective coping

strategies, seeing more options and more likely to recognize consequences (Fields & Prinz,

1997, Phelps & Jarvis, 1994). While some studies have found no clear pattern of age

differences in the type of coping utilized (Herman-Stahl, Stemmler & Petersen, 1995, Seiffge-Krenke, 1995) others have found that type of coping and strategies utilized may change with age.

Ebata & Moos (1991) found in their sample of adolescents ranging from 12-18 years that older adolescents relied more on approach or problem focused type coping. In a later study, Ebata & Moos (1994) found that older adolescents (12-18 years) reported using more of all types of coping except for cognitive avoidance and emotional discharge. Seiffge-Krenke & Schulman (1990) found that there is a tendency for cognitive coping to increase with age and in her study with students between the ages of 12-19 years, Seiffge-Krenke (1993) reported that active and internal coping increased in both males and females with increasing age.

In a study to look at the relationship of coping to psychopathology, Recklitis and Noam (1999) found that interpersonal strategies and active problem solving were associated with higher developmental levels and avoidance and ventilation were associated with less mature levels. Fields & Prinz (1997) reviewed research published on child and adolescent coping using non-clinical samples, and concluded that problem-solving or demanding activities were related to better overall adjustment for all age groups. The findings related to age seem to support similar findings in the adult population that the addition of problem-focused strategies and a variety of available responses may be more important in shielding from stress than any single coping response (Folkman & Lazarus, 1984, Holahan, Moos & Schaefer, 1996, Pearlin & Schooler, 1978)

EMOTIONAL SUPPORT

Emotional support is one component of social support and is considered to be a coping resource. Coping resources include personal aspects of the individual and/or the social environment that lead to adaptation (Compass, 1987) Social support is treated as a resource because while it is available in the social environment the person must cultivate and use it (Lazarus & Folkman, 1984). Social support has been defined by House, Umberson, & Landis (1988) as the "positive, potentially health promoting or stress buffering aspects of relationships such as instrumental aid, emotional caring or concern or information" (p.302). Emotional support is a primary component of social support and most of the research related to stress and coping has centered on this component. (House, Umberson, & Landis (1988).

Barrera (1986) discussed three broad categories of social support including social embeddedness, perceived social support, and enacted social support. Social embeddedness refers to the connection to others in their social environments. Perceived social support characterizes social support as the cognitive appraisal of being reliably connected to others and has emerged as a prominent concept. It seems if one believes his or her resources are adequate to cope distress will be less likely to develop (Licitra-Kleckler & Wass, 1993). Enacted support is conceptualized as actions others perform when they render assistance to focal person. Social support and its components have frequently been included in research and it is the most often cited coping resource even though criticism exists of social support research. Criticism includes definitions that are too broad or vague, lack of consistency in definitions, too much diversity in measurement and lack of consistency in research findings (Barrera 1986, House, Umberson & Landis 1988). An additional criticism is that

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measurements may fail to differentiate between social support as a resource and social support as a coping strategy (Glyshaw, Cohen & Towbes 1989, Pierce, Saranson, & Saranson, 1996).

Most of the research involving social support has attempted to address the process through which social support has a beneficial effect on well being. Two processes or models are recognized in the social support literature. These include the "stress-buffering" model and the "main effect" model. The stress-buffering model proposes that support buffers or protects person from potentially pathogenic influence of stressful events. Social support may intervene between stressful events and reactions through several mechanisms such as stress reappraisal (e.g. re-defining harm), by providing a solution to problem, reducing perceived importance of a stressor or promoting healthy behaviors. Cohen & Wills (1985) provided a list of the types of support related to the buffering of stress. They included:

> Esteem support: person is esteemed and accepted (also called emotional support, expressive support)
> Informational support: help in defining and understanding events
> Social companionship: spending time in leisure activities
> Instrumental support: provision of aid, services resources

The main-effect model proposes that social resources have a beneficial effect whether or not person is under stress and social support has it's positive effect on well-being by providing a person with regular positive experiences and a set of stable roles within a community (Barrera, 1986, Cohen & Wills 1985, House, Umberson, & Landis, 1988,Thoits, 1982). Reviews conducted of studies conclude that there is evidence for both models, yet neither type is found consistently (Cohen & Wills, 1985, House, Umberson & Landis 1988,

Seiffge-Krenke, 1995). Findings of several studies related to stress and coping are included below. The review includes findings from studies involving adolescents and supports the inconsistency of results found in reviews by others.

Gore & Aseltine (1995) found traditional stress-buffering effect in their study of adolescents and adolescents with high support did not have elevated depressive symptoms when experience stressors. Ystgaard (1996) findings give support for both the main effect and the buffer hypothesis and found that the various domains of support (family, friends and classmates) contributed independently to the variance for symptoms score and support from peers and family increased with increasing negative events. Seiffge-Krenke (1995) found that across seven studies there was support for both the benefits and costs of social support. The majority of events (74%) adolescents had to cope with involved interpersonal conflicts with parents and peers and adolescents were very much involved in social relationships. Active coping in the form of "asking for assistance" was the strongest coping factor and explained most of the variance in coping in the studies. Distressing functions of relationships were also clear and disengaged and conflicted families produced the highest stress levels in adolescents. The study results supported the stress- buffering effect of social support with both peer and parent relationships showed a buffer effect but the effect was more pronounced in regards to perceived family cohesion. Two other studies did not offer significant findings on the role of social support. In a study of students grade 7 to 12 by Rowlinson & Felner, (1988) dealing with major life events or hassles no support was found for the stress buffering or main effect model of social support. Zeidner & Hammer, (1990) also found in their study that results for social resources were not significant and support was lacking for buffer

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hypothesis. According to the authors of this study, social relationships for adolescents may offer less protection than for adults and could possibly be more stressful.

Studies with adolescents have also examined who provides support. Research by Seiffge-Krenke (1995) showed that parents are highly valued for their remarks and counsel on school and future related problems and still are an important source of support for the adolescent. Peers were found to be used more to discuss personal problems. Munsch & Wampler, (1992) found in their multi-ethnic sample of students that parents were clearly important sources of support but noted that school personnel were named infrequently as sources of support and professionals rarely named. This finding was supported by a study conducted by Dubow, Lovko & Kausch (1990) exploring adolescent health concerns and perceptions of helping agents. A majority of study participants (90%) found parent and friends to be helpful, but helping agents in the school were less often viewed as helpful. While it seems that the types and level of support differ based upon the provider of support research by Munsch & Blyth (1993) did not find strong support for idea that supportive relationships are specialized in their functions. Instead there is a considerable degree of overlap in functions filled by different people and the decision to utilize someone may be more important than is the decision to mobilize a special relationship. In their study, peers offered levels of support comparable to adults but support varied considerably so the authors suggest that it may be more helpful to adolescents to use both peers and adults.

There is a general belief that lack of positive social relationships leads to negative psychological states such as depression, anxiety (Cohen & Wills, 1985). Social support has

been related to adjustment and adolescents reporting the most positive adjustment used more social support and social support was inversely related to symptoms patterns (Steward, Jo, Murray, Fitzgerald, Neil, Fear & Hill 1998, Yarcheski & Mahon, 1986). Ebata & Moos (1994) also identified a link with coping and adolescents in their study who reported more ongoing resources used more approach and less avoidance coping responses.

Based upon a review of the literature offering support for the buffering effect in adolescents and the link with social support and adjustment, perceived emotional support was measured as part of this study. According to Cohen & Wills (1985) informational and esteem support are more likely to be relevant for a broad range of stressful events and the other forms of support depend more on a specific match between support available and the coping requirement. The focus on emotional support is also appropriate because the link between support variables and psychological outcomes is strongest with this component (Slavin & Rainer 1990). Since the study was measuring a component of social support associated with the buffering model, the survey items were designed to measure perceived availability. According to Cohen and Wills (1985) the perception of available support acts as a buffer and provides a good indirect measure of the effective support people are receiving. Reviews of non- experimental studies find evidence of buffering in studies using measures of perceived support (House, Umberson & Landis, 1988).

The role of perceived emotional support in mediating or buffering the effects of distress will be examined in the study. The relationship with gender, grade and ethnicity will also be examined. Discussed below is a review of the literature on gender and social support,

age and social support and ethnicity and social support. Additional findings concerning the relationship between coping and social support are also included.

Gender and Social Support

Studies support that females use social support more frequently than males (Frydenberg, 1997 Greenberger & McLaughlin, 1998, Recklitis & Noam, 1999 Seiffge-Krenke & Shulman 1990, Stark, Spirito, Williams & Guevremont 1989). Females also report higher emotional support from both non- family adult and peers than do boys (Munsch & Wampler,1992, Slavin & Rainer 1990) According to Seiffge-Krenke (1995) the quality of friendships also differ by gender. Her studies showed that females preferred more close intimate relationships limited to one or two friends and males had more friends and they were more active in leisure pursuits. She also found in her earlier work that females address problems immediately, talk about them more frequently with significant others and usually try to solve problem with person concerned. In addition they worry a lot about problems, think about possible solutions and expect consequences more than boys. Due to these fearful anticipations they seemed more stressed often resulting in emotional reactions like crying, slamming doors and running to friends for sympathy (Seiffge-Krenke 1993).

The type of support provided to females as compared to males may differ too. Munsch & Wampler (1992) found that while males named fewer significant people than females did they received more instrumental support, problem-solving help, and distraction. Females reported more emotional support and more emotional regulation. In a study of high school students, 9th-12th grade females reportedly used seeking social support for both

instrumental and emotional reasons and the reasons were found to be empirically distinct. The seeking social support for instrumental reasons loaded on the active coping factor and seeking social support for emotional reasons loaded on the venting of emotions in the emotion focused coping factor (Phelps & Jarvis, 1994).

The use of social support for emotional regulation may help or hinder the female adolescent and more research is needed. Groer, Thomas & Shoffner (1992) found that girls report more stressful events that are relational and Ystgaard (1999) found that girls may be doubly disadvantaged in social relationship since they report more problems and are more emotionally responsive to them. Gore & Aseltine (1995) also found no stress buffering effect for females and instead suggest that strong involvement with friends may amplify stress effects. Their findings for males showed that support from family and friends provided a buffer. Yet, other studies have shown that use of social support is associated with less distress in females (Aseltine, Gore & Colten, 1994, Avison & McAlpine 1992 , Licitra-Kleckler & Waas, 1993). Additional research is necessary on the role of social support in mediating or worsening the effects of stress for female adolescents. All components and types of social support need to be explored in this population.

Ethnicity and Social Support

Few studies exist with minority populations but Pollard's (1993) study focusing on the perceptions of African- American adolescent's school experience found that while interpersonal support was an important factor many students found support outside of school rather than within the school setting (91% males, 86% females). When support was

found in school there were differences by gender and females were favored. This finding was in contrast to findings with white students. In a study involving five urban high schools with mostly minority populations, Prelow & Guarnaccia (1997) found that socioeconomic status did not predict social support and that black and Hispanic students reported more received social support than white students. In a multi ethnic sample of adolescents, Munch & Wampler (1992) found that African American students reported receiving more problem solving help than did Caucasian students and reported engaging in more risk taking behavior with helpers than did Caucasian students. In terms of family support, African American and Hispanic students named significantly more adult relatives than did Caucasian students.

In terms of ethnicity and gender, Weist, Freedman, Paskewitz, Proescher, & Flaherty (1995) reported that for African-American boys, family cohesion was found to be the only variable that protected against stress. For girls it was found not to be protective and was associated with increased vulnerability to school problems. Further findings showed that the use of social support in general increased the vulnerability of females to school problems. The authors speculated that girls might shift attention from school to social support under high stress. Additional findings support the previous research with Caucasian females in the use of social support and indicate that female African-American students also use more social support than males (Halstead, Johnson & Cunningham 1993, Pollard 1993).

Age and Social Support

Limited significant findings exist based on age or grade level. Evidence was presented earlier to support that parents still remain a valuable source of support for the adolescent. In addition to the roles that parents play in providing support, it seems that peers increase as a source of support and Seiffge-Krenke (1993) found that social support from peers increased continuously between ages 12-19. Support for this finding was reported by Dubow, Lovko, Kausch (1990) and results from their study with adolescents found that seeking help from friends increased by grade level.

Coping and Social Support

Previous information on coping and social support has been presented but an additional concern that needs to be noted is that social support research fails to differentiate social support as a resource (actual or perceived availability of helpful others) from social support as a coping strategy (Glyshaw, Cohen & Towbes (1989, Pierce, Sarason, & Sarason, 1996) which may influence findings related to stress and coping. It has been suggested that social support might be re-conceptualized as coping assistance (Thoits, 1986) rather than a separate resource.

Finally, while coping and social support may both serve as a potential buffer to the effects of stress, it must be noted that the individuals coping response may also affect one's social support and ineffective coping responses may lead to poor interpersonal relationships, reducing available coping sources (Rice, Herman, Petersen, 1993).

PSYCHOLOGICAL DISTRESS

Dubow, Lovko, & Kausch (1990) found that a significant proportion of adolescents are troubled by physical, psychological, behavioral, sexual and interpersonal problems and there are clear indications that some are more at risk than others. Garrison, Schlucter, Schoenbach, & Kaplan, 1989 also found that high persistent symptomology is not a universal teenage experience but rather affects a subset of adolescents, McGee, Feehan, Williams, Partridge et al (1990) supported this finding as well and while most adolescents did not report high levels of emotional symptoms, a significant minority of 15 year olds did have a disorder. As part of a study on the quality of student life, Siddique & D"Arcy (1984) 39% of subjects (N=1,038) reported a mild level of distress but a significant 27.5% reported high levels of psychological distress.

Results indicate that coping and social relationships have a direct relationship with functioning (Compass, Orosan & Grant 1993) and the lack of effective coping skills and supportive interpersonal network may contribute to depression independent of exposure to life stress (Billings & Moos 1984, Billings, Cronkite, Moos 1983). According to Frydenberg (1997) depression may just be one of the ways adolescents show that they are not coping effectively.

Transient depressed mood may be part of normal development while persistent symptoms are not (Garrison, Schlucter, Schoenbach & Kaplan, 1989). According to Compass, Orosan & Grant (1993) psychological distress and psychopathology are separated into three levels that include distressed mood, syndromes (wide range of

symptoms) and disorders recognized in the Diagnostic and Statistical Manual. These are further defined by Seiffge-Krenke (1993) as:

> Depressive mood /symptoms: presence of sadness for unspecified period of time
>
> Depressive syndrome: set of emotions and behaviors that occur together
>
> Depressive disorder/Depression: defined and recognized as part of disorder model of psychopathology

While they are all related, they are distinct and have different prevalence rates. A common feature to all is that they can be complicated by co-morbidity such as anxiety and rarely are measures of depressed mood experienced in absence of other negative emotions (Compass, Orosan & Grant, 1993). It is also important to note that biochemical factors may contribute or be related to depression. Findings from research into biochemical factors associated with depression suggest that problems in the regulation of neurotransmitter systems, alterations in several neuropeptides and for some depressed individuals, hormonal imbalances, may be involved in major depressive episodes (APA, 2000).

Psychological distress measures focus on depressive mood and related symptoms. While they do not reach the criteria of a depressive disorder, evidence is accumulating for the central role of depressed mood as a precursor to other forms of emotional and behavioral disorders (Colten, Gore, Aseltine 1991). Depression as recognized in the Diagnostic and Statistical Manual (2000) is defined by the following symptoms:

> Persistent, sad or irritable mood,
> Loss of interest in activities once enjoyed,
> Significant change in weight or appetite,

Difficulty sleeping or oversleeping,
Loss of energy,
Difficulty concentrating,
Recurrent thoughts of death or suicide

These same symptoms may be noted in adolescents experiencing psychological distress but may differ in intensity and duration.

Psychological distress not only includes symptoms of depressed mood, it also includes symptoms related to anxiety and psychosomatic symptoms. Symptoms of anxiety are common (Fleming & Offerd, 1990) and general signs and symptoms include nervousness, tension, and feelings of apprehension and dread. Anxiety is composed primarily of a negative affect, a sense of uncontrollability and a shift in attention to a primary focus on the self. It involves elevated arousal and may be self-perpetuating (Summerfeldt & Endler. 1996).

In addition to anxiety, psychological states also affect the way a person monitors their body and increases the readiness to define any changes as symptoms. Psychological distress states are almost always accompanied by physical discomforts (Mechanic 1980). Green, Werner, & Walker (1992) reported that manifestations of stress for adolescents may include physical symptoms, lethargy, headaches or other somatic complaints. Many adolescents will present with vague symptoms. Greene, Walker, Hickson, & Thompson (1985) found that adolescents with higher negative life change scores had higher level of symptoms and pain. Robinson, Greene & Walker (1988) found that the functional somatic group in their study had significantly more negative life events than other groups.

Symptoms seem to occur regardless of gender and Walker and Green (1987) reported that more frequent negative life events were associated with increased symptoms for both males and females. Psychosomatic complaints (headaches & stomachaches) clustered with emotional factors (negative coping resources) in a study conducted by Brack, Brack & Orr (1996) suggesting that these behaviors are related to emotional factors. Psychosomatic symptoms have also been linked with anxiety and depression (Campo & Frisch, 1994) and McCauley, Carlson & Calderon (1991) found that somatic symptoms were most strongly associated with severity of depression regardless of any co-existing disorder.

Depressive phenomena, including depressed mood, syndromes and disorders are important correlates of adolescent stress and coping for several reasons. First, they increase substantially during adolescents and the divergence is rates for males and females are dramatic. Second, stress is clearly linked to adolescent depression and third, there is a high rate of co-morbidity associated with depressive symptoms and problem behaviors (Compass, Orosan & Grant 1993). Reinherz, Giaconia, Lefkowitz, Pakiz, & Frost (1993) found in their longitudinal study that almost 1 in 10 (9.4%) adolescents met the criteria for major clinical depression. Rates of depression for adolescents have ranged from 0.4% to 6.4% but in a review of existing studies, Fleming & Offerd (1990) found that there was marked inconsistencies in the measurement of depressive disorders, in the ways instruments are used and in the number and types of informants. According to the authors it is difficult to draw firm conclusions about prevalence other than that it increases in frequency in adolescence. It is also important to note that many studies in the

stress and coping literature include measures of depressed mood and not clinical depression (Aseltine, Gore & Colten, (1994).

Gender and Psychological Distress

Gender differences do seem to exist in the experiencing of psychological distress with females reporting more symptoms of distress (Ebata & Moos, 1991, Dubow, Lovko & Kausch 1991, Eiser, Hagerman's & Eiser 1995, Herman & Lester, 1994, McCauley, Carlson & Calderon 1991, Walker & Green, 1987). This finding seems to be true for distress in both physical and psychological areas (Eiser, Havermans, & Eiser 1995, Ingersoll, Grizzle, Beiter, & Orr 1993). The proportion of girls with affective problems far exceeds that of boys (Colten, Gore, & Aseltine1991, Rubin, Rubenstein, Stechler, Heeren, Halton, Housman & Kasten, 1992) and while boys have higher externalizing problems girls experience higher levels of depressed effect (Windle & Windle 1996). In a study conducted by Reinherz, Giaconia, Lefkowitz, Pakiz, & Frost (1993) the relative risk of female adolescents developing major depression was almost three times greater than for males and the severity was also significantly greater. High stress females also reported more symptoms of depression than high stress males (Licitra-Kleckler & Waas, 1993).

Findings from the Oregon Adolescent Depression Project showed that females are more likely to have disorders, especially depression, anxiety, eating disorders and

adjustment disorders (Lewinsohn, Hops, Roberts, Seely & Andrews 1993). The above findings are disturbing and suggest that adolescent females may be at increased risk for psychological distress. It seems that these gender differences emerge by about 14-15 years of age and persist into adulthood (Petersen, Compass, Brooks-Gunn, Stemmler, Ey & Grant 1993).

Two additional concepts relating to gender and psychological distress need to be mentioned. These include the orientation to problems and a discussion of the role of ruminating behavior. Females may be at an increased risk for psychological distress due to a tendency to internalize distress rather than externalize it. Internalizing is a cognitive, emotional or psychosomatic response (e.g. depression, anxiety, psychosomatic symptoms) to problems or stress while externalizing is overt, active or outward expressions (e.g. drug use, delinquency). Males and females may be predisposed or socialized to different sex-role expressions of distress with females showing more internalizing and males showing more externalizing behaviors (Colten, Gore, Aseltine 1991, Pine, Cohen, Gurley, Brooks & Ma, 1998).

Females may also be more likely to engage in rumination. Nolen-Hoeksema (1987,1994) has conducted studies on factors relating to rates of depression in females and she proposes that females response tendencies toward depression are actually a cause of depression and females engage in rumination which interferes with attention, concentration and the initiation of instrumental behaviors. Rumination is a "stable emotion-focused coping style conceived of as a pattern of behaviors and thoughts that

focus the individual's attention on his her emotional state and inhibit any actions that might distract the individual from his or her mood" (Broderick, 1998, p.176). It is an attempt at emotional regulation and girls report more ruminative coping than boys. Nolen-Hoekesema & Girgus, J.S. (1994) also found that girls are more likely than boys to be low on instrumentality, high on ruminative coping and low on dominance and aggression in interpersonal interactions. In a study in which the purpose was to investigate the hypothesis that ruminative coping is used to a greater extent by girls than boys prior to adolescence, girls were more likely to use rumination in every domain but both boys and girls ruminated less with peer problems (Broderick, 1998). Compass, Orosan & Grant (1993) found that rumination maintains depressed mood, inhibits problem-focused coping and leads to more depressive outcomes.

Ethnicity and Psychological Distress

As in other areas related to stress and coping, studies and findings related to ethnicity and psychological distress are limited. But consistent with findings for all females, Garrison, Schluchter, Schoenbach & Kaplan (1989) found the prevalence of depressive syndrome (ages 11-17) found in their study was highest among African American females. In a longitudinal study carried out by Garrison, Jackson, Marstellaer, McKeown & Addy (1990) African-Americans generally had higher depressive scores than whites and females had higher scores than males.

Age and Psychological Distress

In terms of age, Dubow, Lovko, & Kausch (1990) found that high school students experienced significantly more severe levels of physical, psychological, acting out, and sexual problems than their middle school counterparts and that 9th graders were most distressed. In contrast to this finding, the effect of age on prevalence and incidence of depression was found not significant in a longitudinal study with subjects 14-18 years old (Lewinsohn, Hops, Roberts, Seely & Andrews 1993). Age may be more significant for females, since differences in prevalence seem to emerge at age 13-15 years of age and increase over the years (Broderick, 1998, Horowitz & White, 1987Nolen-Hoeksema, 1994). Petersen Sarigiani & Kennedy (1991) found that sex differences at grade 12 were significant and girls showed more depressed effect and poorer emotional tone than boys by grade 12.

Coping and Psychological Distress

Coping is an important dimension in the study of adolescent psychopathology and behaviors that adolescents use to cope have implications for their adjustment and mental health (Recklitis & Noam, 1999). Rarely is more than 15% of the variance in symptomalogy is accounted for by major life events. Findings suggest that whether children or adolescents become depressed or remain resilient during negative life events has to do with the quality of their coping strategies and with personality characteristics (Boekaerts, 1996). Herman-Stahl & Petersen (1996) found that symptomatic youth reported lower levels of personal and social resources and poor coping skills and low perceptions of efficacy were more closely linked with depressive symptoms than with stress.

Coping skills and the type of coping have been linked with psychological distress and Herman-Stahl & Petersen (1995) found that symptomatic youth reported lower levels of personal and social resources. Studies by Ebata & Moos (1991) found that adolescents who used less problem solving, less positive appraisal, more logical analysis, and more cognitive avoidance were more depressed and anxious. In a later study (1994) they found that adolescents who reported greater distress used more cognitive avoidance, resigned acceptance, and emotional discharge. While studies that exist differ in the coping strategies, they do seem to suggest that depressed and non- depressed persons differ primarily in emotional regulation (as opposed to problem solving). Depressed individuals use more wishful thinking and avoidance and seek more emotional support and engage in more emotional discharge (Folkman & Lazarus 1986). Emotion focused coping was also found to be strongly predictive of higher levels of depressive effect in a study carried out by Windle & Windle, (1996). The findings above also seem to be supported by Glyshaw, Cohen, & Towbes (1989) who found that problem-solving coping was significantly and negatively related to depression and anxiety.

The relationship between coping and psychological distress is an important one and it seems there are emotional and physiologic costs to stress that cannot be coped with effectively. It is likely that individuals begin to set a pattern of stress responses by early adolescence. The presence of negative coping strategies is significantly associated with the identified problem outcomes of anxiety, depression psychosomatic symptoms and behavior problems (Dise-Lewis, 1988).

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Social Support and Psychological Distress

Of all relationships reviewed related to social support and well-being, the greatest amount of evidence exists for negative association between social support and distress. Most of relationships found used measures of perceived social support and the deterioration in perceived social support was related to increases in depressive symptoms (Barrera, 1986). Aseltine, Gore & Colten (1994) found that relationship problems and lack of support strongly linked to increase in depressive symptoms for those adolescents initially asymptomatic and friends or problems with friends were more related to those with chronic depressive symptoms. Rubin, Rubenstein, Stechler, Heeren, Halton, Housman & Kasten, (1992) found adolescents that reported higher levels of depressive effect had lower levels of family cohesion and more problematic peer relationships. While Licitra-Kleckler & Waas (1993) found that females had higher levels of depression with low levels of peer support, the rate was equal to boys when reporting high levels of peer support. Support from teachers seems to be of some benefit to girls and a study by Natvig, Albrektsen, Anderssen & Qvarnstrom (1999) found that support from teachers was an important predictor of psychosomatic symptoms in girls and the presence of support decreased risk of symptoms.

According to Holahan, Moos & Schaefer (1996) social support or seeking help may also lead to increased distress when used in unresponsive social contexts. It may also be that psychological distress can lead to deterioration of social support due to poor social skills (Barerra 1986). Coyne, Aldwin & Lazarus (1981) suggest that the behavior of depressed person is aversive yet powerful in ability to arouse guilt in others. Persons may provide

assurance and support but then reject and avoid depressed persons in a way that heightens their uncertainty and insecurity. Petersen, Compass, Brooks-Gunn, Stemmler, Ey & Grant (1993) found that once in depressed trajectory an individual stays more likely to stay on this course because of tendency to alienate and withdraw from the very social supports that can minimize negative effect. This may not improve over time and individuals with a past history of depression were found to have had significant lower social support from friends than those with no history in a study done by Klein, Lewinsohn & Seeley (1997). The findings suggested that that there was deficits in the area of interpersonal functioning even after recovery. Further study into the prevention or reduction of factors related to the development of psychological distress and depressive phenomena is essential since studies suggest that those with past history of depression still experience symptoms after recovery (Klein, Lewinsohn & Seely 1997, Lewinsohn, Roberts, Seeley, Rhode, Gotlib & Hops 1994, Petersen, Compass, Brooks-Gunn, Stemmler, Ey & Grant (1993). It also seems that a history of depressed mood is strongly predictive of future symptomatology and an elevated vulnerability to being depressed again   (Herman-Stahl & Petersen 1996).

SUMMARY

The literature was reviewed to examine existing studies and their findings related to the major constructs of this study. The Chapter began with a discussion of the importance and purpose of the study and an overview of adolescent stress. The concept of coping was defined and the problem-focused, emotion-focused model was introduced along with related findings in studies with adolescents. The relationship of coping to gender, ethnicity and age was explored. Next the concept of social support and a component of social support,

perceived emotional support was addressed. Findings from studies concerning social support, gender, ethnicity and age were reviewed. The relationship between coping and social support was also reviewed. Finally, the concept of psychological distress was discussed. Studies were also reviewed concerning the relationship of psychological distress to gender, ethnicity grade, coping and social support.

CHAPTER THREE

METHODOLOGY

INTRODUCTION

The purpose of this secondary data analysis study was to examine the role of coping response and perception of available emotional support in mediating the effects of stress and protecting the adolescent from symptoms of psychological distress. In addition, the relationship of gender, grade and ethnicity to these factors was also investigated. This section presents the methodology and procedures used to meet the study objectives. First, a description of the research methodology and design is provided. The original study is discussed along with survey design. Constructs and measures are explained and information on the focus groups and the pilot study utilized to enhance the development of the survey instrument is presented. A description of the selection of subjects and data collection procedures follows. Finally, the operationalization of terms and the methods of analysis are addressed with limitations of the study design delineated.

RESEARCH METHODOLOY AND DESIGN

A confidential, self-administered 120-item questionnaire was developed and completed as part of a cross-sectional research study conducted at a large urban high school in Maryland during the Spring of 1996. The study was part of a cooperative project between the high school and the Johns Hopkins School of Hygiene and Public Health. The original study was designed to explore the relationship between student life stress and negative health outcomes among public high school students. Stressors examined included school-related and personal stressors and the health outcomes included

behavioral, physiological and psychological outcomes. The study was based upon a "school stress model" which was adapted from the NIOSH "work stress" model. The model included school and non-school stressors, perception of student life stress, factors that influence student life stress, such as coping, social support, demographic and psychosocial factors (e.g. risk taking personality), and behavioral, physiological and psychological health outcomes. The model was previously discussed in Chapter one and two and a diagram of the model is found in Chapter one (Figure 1).

. Three major constructs were included in the original study: stressors, perceived student life stress and health outcomes. Nine subscales were developed to examine student stressors, examples of stressors include: perceived physical danger, pressure to get good grades, worry about friends, family finances or appearance and peer pressure to use alcohol and drugs, have sex or smoke. The reliability analysis of the stressor subscales is found in Table 1.

Based upon Epstein's Quality of School Life scale, a twenty-item scale was created to measure perceived student life stress. Internal reliability was measured with the study sample and an alpha of .82 was obtained. Psychological health outcomes were measured on a 27- item scale based on the Symptom Checklist-90-Revised (SCL-90-R) and included items to measure symptoms of somatization, depression and anxiety. The questionnaire also included measures of coping styles, risk taking and lifestyle issues, and perceived social support and additional measures of behavioral and physiological health outcomes. Simple logistic regression was used to determine if a significant correlation existed with student life stress and six demographic variables, but only two showed a

Table 1: Internal Consistency Reliabilities of Stress Subscales

Question #	Stressor (9 scales)	Number of items For scale	Cronbach's alpha α
1 (a-f)	Feel in physical danger	6	.72
2 (a-e)	Feel overwhelmed	5	.50
3 (a-f)	Unfairness at school	6	.70
4 (a-e)	Pressure to get good grades	5	.71
5 (a-f)	Feel bothered by environment	6	.73
6 (a-c)	Worries about family, well-being, appearance	3	.50
7 (a-c)	Worry about being pregnant, STD's	3	.83
8 (a-d)	Peer pressure to have sex, use drugs, or smoke	4	.76
9 (a-d)	Verbal abuse in school	4	.51

Source: Gershon et al., Harman Conference, 1999

positive association. Being male and African-American were correlated with more stress. Logistic regression was performed using the nine sub-scales measuring stressors to determine their association with student life stress. Three stressors showed a positive relationship with student life stress: peer pressure to have sex, do drugs, use alcohol, and smoke; inequities at school (e.g. sexual harassment from students, unfair treatment due to gender, unfair treatment due to race, teachers showing favoritism, verbal abuse from teachers); and environmental bothers (e.g. overcrowded classes, condition of bathrooms, time allowed to use bathroom). Students experiencing these three types of stressors were more likely to report higher levels of stress.

The original study also found that stress was positively associated with the behavioral outcomes of frequent drinking, active smoking and sexual activity. Additional analysis of student stress involving the psychological outcomes found that subjects with higher stress showed higher levels of depression ($p<0.01$), anxiety ($p<0.01$) and somatization ($p<0.01$). The statistical findings from the original study are presented in Table 2.

For this study, a secondary analysis was performed on the data collected by the Johns Hopkins research team investigating two major factors found in the theoretical model that were not previously examined. While the objective of the original study was to assess student life stress, identify student life stressors and explore the potential associations with negative health outcomes, the focus of this study was on the factors that may potentially serve as a buffer to the negative mental health related effects of perceived student life stress.

Table 2: Correlates of Student Life Stress

Demographic variables

	OR	CI$_{95\%}$
Male	1.4	1.1,1.8
African-American	1.4	1.0,1.9

Stressors

Peer Pressure	1.9	1.4,2.8
Inequities at school	1.8	1.3,2.4
Environmental bothers	2.1	1.0,1.6

Health Outcomes

Behavioral

Frequent drinker	3.5	1.7, 7.3
Active smoker	2.5	1.6,3.8
Sexually active	1.7	1.3,2.3

Psychological

Depression	3.4	2.5,4.5
Anxiety	2.2	1.6,2.9
Somatization	1.3	1.0,1.8

Source: Gershon et al., Harman Conference, 1999

Secondary data analysis has been defined as "any further analysis of an existing data set which presents interpretations, conclusions, or knowledge additional to, or different from, those presented in the first report on the inquiry as a whole and its main results" (Hakim, 1982, p.1). Secondary data analysis can be utilized to provide a more detailed or different focus than the original research findings and can also involve the use of more sophisticated analytic techniques to reanalyze an existing set of data (Hakim, 1982). Secondary data analysis has advantages and disadvantages and both must be recognized. Advantages include the conservation of resources such as time, money and personnel and a decrease in data collection problems. Disadvantages include problems with obtaining complete and accurate documentation of the data, the possibility that the quality of the data (e.g. appropriately designed questionnaires) may be questionable, and that variables may be lacking that the researcher wishes to study (Kiecolt & Nathan, 1985).

Many of the limitations listed above have been addressed. The previous researcher provided documentation of the data and the theoretical model used to develop the questionnaire was applicable to this study. The one disadvantage that could not be addressed involves the development of the questionnaire. The current researcher did not choose the measures used to develop the questionnaire; however, the development of the questionnaire included the use of focus groups, a review of existing measures, pilot testing and psychometric analyses. This secondary data analysis will provide new information concerning the role of coping response and perceived emotional support in

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moderating or protecting against the effects of excess stress on mental health related outcomes in adolescent high school students.

INSTRUMENT

The 120- item questionnaire (Appendix A) was developed after completing a review of existing measures of the constructs included in the theoretical model. The use of focus groups from the high school was carried out to enhance the applicability of the questionnaire to a non-clinical sample of adolescents.   Once the questionnaire was developed and reviewed, pilot testing and psychometric analyses were performed and are discussed below.

The following constructs were measured in the questionnaire: non-school stressors (sexual activity, responsibilities after school, family stressors, student's physical health and social stressors); school stressors (environmental conditions, social conditions, peer pressure, school security, and academic pressure); perceived level of stress (in school and out of school); physical and psychological outcomes (depression, somatic symptoms, and anxiety/sleep disorders); coping mechanisms (informed action, passive avoidance, and external support); perceived social support (teachers, parents, relatives, friends, siblings and others); quality of school life (school work, satisfaction with school and school competency) and risk taking behavior. The survey also included personal and demographic information. This information was collected in Section 1, items 1 through 23 and included such information as: gender, age, ethnicity, grade, school program, grades most often received, number of different high schools attended, history of

repeating a grade in high school, academic or career goal after high school, current employment or volunteer work, living with both parents full-time and presence of a steady girlfriend or boyfriend.

The non-school and school stressors were developed based upon a review of the literature and findings from the focus groups, which were conducted six months prior to the distribution of the questionnaire. The three focus groups were made up of 6-8 students from the high school that met for 2 hours and stressors were reviewed to determine compatibility of stressors from the literature review with those experienced by the student population. Focus group participants also confirmed the placement of the stressors in categories of non-school and school related stressors. Section II, Personal Issues, (items 1 through 10) and Section III School Life, (items 1 through 20) were used to collect information on school and non-school related stressors and student life stress. Section IV, Coping Styles, (items 1-23) was used to determine coping style and Section V, Health Issues, measured symptoms of psychological health (items 1-27). Section VI, Lifestyle, included information about risk taking, two questions concerning perceived level of stress both in and out of school, and four questions directed at gaining information on school improvements.

Pilot testing of the survey was done at a nearby private school and included cognitive testing and completion of the survey with a sample of 20 students. The pilot testing was done anonymously. Results of the psychometric measures that were performed are included in discussion of the specific measures.

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Constructs and measures used for this secondary analysis include perceived level of stress related to school (variable one), perceived level of stress non-school related (variable 2), symptoms of psychological distress (variable 3), type of coping: problem-focused coping (variable 4A) or emotion-focused (variable 4B), and perceived emotional support (variable 5). Appendix A includes a table of the variables and the survey items used to measure them. Items on the original questionnaire related to specific stressors, health behavior, physical health related outcomes, risk taking and quality of school life are not being used in this study.

Nine questions, three items for feelings of stress related to school and six items for ranking feelings of stress regarding life outside of school measured levels of perceived stress. The two items in Section VI of the questionnaire, one item to address an overall stress level in school (In general, how would you rate how "stressed out" you feel by school) and one item that addressed overall stress level outside of school (In general, how would you rate how "stressed out" you feel by your life outside of school), were scored based upon a 4-point scale. The items included the following responses: very stressed (1), moderately stressed (2), slightly stressed (3), and very little stress (4). Question number two (2a-e) in Section II of the survey included items designed to measure feelings of stress both in school (2a-2b) and out of school (2c-2e) and were more specific to possible stressors in each of the areas of perceived stress (e.g. amount of school work, after school chores, job). Responses were coded as: rarely or never (1), some of the time (2), and most of the time (3). The internal reliability was measured for

all responses included in the item (α=.50 for items a-e) and for the subscale without items c,d,e (α=.45).

The physical and psychological symptoms were assessed using a modified version of the Symptom Checklist –90-R (SCL-90R). The SCL-90-R evolved from the Hopkins Symptom Checklist (HSCL), a 90-item, self-report inventory that lists symptoms related to various aspects of psychopathology. The SCL-90-R obtains scores on nine factors: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. It is used to assess the psychological symptoms of psychiatric and medical patients and can be used with adolescents 13 years and older (Payne, 1985). One of the aims of the scale is to also serve as a psychiatric screening tool and detect symptomatology in non-clinical samples (Payne, 1985). Researchers have also used the SCL-90-R to measure responses to stressful events or chronic strains in non-clinical samples.

Authors of studies using the original instrument in normal populations as well as in psychiatric populations have reported test-retest correlation coefficients ranging from .78 (Hostility) to .90 (Phobic Anxiety). Measures of internal consistency ranged from .77 (Psychotism) to .90 (Depression). The SCL-90-R "Depression" factor score has been found to be significantly correlated with other measures of depression such as the Beck Depression Inventory (BDI) and the Center for Epidemiological Studies Depression Scale (CES-D) (Payne, 1985).

The SCL-90-R instrument was modified for inclusion in the survey and only 27 items from the original scale were included in Section V, health issues. The survey for this study included items from the somatization (5 items); depression (15 items); and anxiety (7 items) dimensions rather than all nine factors from the original scale. The scale was adapted to reflect symptoms of psychological distress defined primarily in the literature as including symptoms of depression, anxiety and somatization (Colton, Gore, Aseltine, 1991, Compass, Orosan, & Grant, 1993, McCauley, Carlson & Calderon, 1991, NIMH, 2000, Petersen, Compass, Brooks-Gunn, Stemmler, Ey & Grant, 1993, Seiffge-Krenke, 1995, Summerfeldt & Endler, 1996). Sample symptoms from the somatization dimension included, headaches, "felt ill" and had hot or cold spells. Symptoms from the depression dimension included felt low in energy, thought of ending life, no interest in things and unable to enjoy day-to-day activities. The following represented anxiety symptoms: scared for no reason, edgy or bad tempered, nervousness/shakiness, and difficulty staying asleep. Subjects were asked, "During the past month, have you felt or experienced the following?" The items were scored based upon a yes or no response. The internal consistency reliability analyses for the subscales were: .82 for the depression subscale, .72 for the anxiety subscale and .60 for the somatization subscale.

The coping response measure used was obtained from a previous study done by Billings and Moos (1981) and the items they then used in their scale relating to problem-focused and emotion-focused coping were from the "Ways of Coping" checklist developed by Folkman and Lazarus (1980). The original checklist created by Folkman and Lazarus (1980) included 68 items, however only 19 items from the original checklist

were used in the Billings and Moos study. Section IV, coping styles, included eight items from the problem-focused coping category and 11 items from the emotion-focused coping category. Four additional items that applied to an adolescent population were created with input from the focus group and included "try to reduce the tension by drinking alcohol, try to reduce the tension by sleeping more, go shopping and buy yourself some nice things and spend extra time watching TV or playing video games." Items were numbered 1 through 23 in Section IV of the survey, labeled "Coping Styles". Folkman and Lazarus (1980) found adequate internal consistency and independence of the two types of coping in the past using the original checklist. The test-retest reliability coefficient for two administrations of the problem-focused scale was .80 and .81 for the emotion-focused scale (Folkman & Lazarus, 1980). The Cronbach's alpha for the 18-item scale used in the Billings & Moos study and incorporated in this study was 0.62.

The original coping measure utilized a yes/no response, but for this study the scale was modified to include three responses (rarely or never, some of the time and most of the time) to the question, "When faced with a difficult situation do you…?" The scale was modified to reflect a coping style rather than a type of coping response to a specific stressful event. Coping styles are methods of coping that characterize an individual's response to stress over a variety of situations (Compass, 1987).

Several additional items were included to measure perceived emotional support and are found in Section II, personal issues and Section III, school life. Questions measuring perceived emotional support included four items for teacher support, one item

for parental support, one item for relative support, two items for friends support, one item for sibling support and one item for support from others.

SUBJECT SELECTION AND DATA COLLECTION

The subjects were 9th, 10th, 11th and 12th grade students in an urban high school in Maryland. Approval was obtained from the Johns Hopkins human studies committee (Appendix B) and the survey was distributed and completed by students in all social studies classes (a required course) during one day in the spring of 1996. Classroom teachers administered the survey with a five-minute explanation of the survey based upon instructions provided by the research team. A disclosure statement was read to inform students that the survey was anonymous and confidential prior to the survey being distributed. Teachers supervised the classes while students completed the survey. A prize drawing entry form for a portable CD player and 10 other prizes was turned in after completed surveys were collected. A member of the research team collected the surveys after every student in each class had finished the survey.

Data provided by the Office of Research and Data for the school system shows the reported ethnic compositions of the school as follows: 83% African-American, 12% Caucasian, 4% Asian and 1% Hispanic. The sample for the study was 77% African-American, 11% Caucasian, 5% Asian and 1% Hispanic. The school listed 17.4% of the students on free and reduced lunch and an average yearly attendance rate of 90.4%. The

percent passing all of the Maryland Functional Test was 81.2%, the suspension rate for 1995-96 was 14.5% and the drop out rate for 1995 was 0. 9%.

OPERATIONALIZATION OF TERMS

Low perceived Stress in School: Subjects found to be low in perceived stress were determined by frequency distribution. Scores ranged from 3 to 9 and placement in low category included all subjects who scored $<=3$. Sample size for this category was N=103.

High Perceived Stress in School: Subjects found to be high in perceived stress were determined by frequency distribution. Scores ranged from 3 to 9 and placement in high category included all subjects who scored $>=7$. Sample size for this category was N=177.

Low perceived Stress Outside of School: Subjects found to be low in perceived stress were determined by frequency distribution. Scores ranged from 7 to 21. Placement in the low category included all subjects who scored$<=8$. Sample size for this category was N=85.

High Perceived Stress Outside of School: Subjects found to be high in perceived stress were determined by frequency distribution. Scores ranged from 7 to 21. Placement in the high category included all subjects who scored $>=16$. Sample size for this category was N=99.

Low Level of Symptoms of Psychological Distress: Subjects found to experience a low level of symptoms of psychological distress were determined by frequency distribution. Scores ranged from 27 to 54 and placement in low category included all subjects who scored <=29. Sample size for this category was N=197.

High Level of Symptoms of Psychological Distress: Subjects found to experience a high level of symptoms of psychological distress were determined by frequency distribution. Scores ranged from 27 to 54 and placement in the high category included all subjects who scored >=44. Sample size for this category was N=122.

Problem Focused Coping: Subjects high on problem-focused coping and low on emotion-focused coping were determined by frequency distribution. Scores for problem-focused coping range from 8 to 24 and scores for emotion-focused coping range from 15 to 40. Placement in the high category for problem-focused coping included all subjects who scored>=21. Placement in the low category for emotion-focused included all subjects who scored <=22. Subjects in this group met the criteria of both high problem-focused coping and low emotion-focused coping.

Emotion Focused Coping: Subjects high on emotion-focused coping and low on problem-focused coping were determined by frequency distribution. Scores for emotion-focused coping range from 15 to 40 and placement in the high category for emotion-focused coping included all subjects who scored >=32. Scores ranged from 8 to 24 for problem-focused coping and placement in the low category for problem-focused coping

include all subjects who scored<=12. Subjects in this group met both criteria of high emotion-focused coping and low problem-focused coping.

High Mixed Coping: Subjects high on problem-focused and emotion-focused coping were determined by frequency distribution. Scores for problem-focused coping range from 8 to 24 and placement in the high category for problem-focused coping included all subjects who scored >=21. Scores for emotion-focused coping range from 15 to 40 and placement in the high category for emotion-focused coping included all subjects who scored >=32. Subjects in this category met the criteria of high problem-focused coping and high emotion-focused coping.

Low mixed Coping: Subjects low on problem-focused and emotion-focused coping were determined by frequency distribution. Scores for emotion-focused coping ranged from 15 to 40 and placement in the low category for emotion-focused included all subjects who scored <=22. Scores for problem-focused coping range from 8 to 24 and placement in the low category for problem-focused coping included all subjects who scored<=12. Subjects in this category met the criteria of low problem-focused coping and low emotion-focused coping.

High Perceived Emotional Support: Subjects found to have a high level of perceived emotional support were determined by frequency distribution. Scores ranged from 10 to 20 and placement in the high category for perceived emotional support included all subjects who scored >=19.

Low Perceived Emotional Support: Subjects found to have a low level of perceived emotional support were determined by frequency distribution. Scores ranged from 10 to 20 and placement in the low category for perceived emotional support included all subjects who scored <=14.

Ethnicity: Ethnicity was divided into two groups: African-American and Other, which incorporated all of the other ethnic groups (Asian American, Caucasian, Hispanic and Other).

Gender: Gender was divided into categories of male and female.

Grade: Grade was separated into four grades: 9th, 10th 11th and 12th grade.

DATA ANALYSIS

Frequency distributions were examined to determine appropriate levels (high and low) for perceived stress in and out of school, symptoms of psychological distress, type of coping (problem-focused/emotion-focused) and perceived level of emotional support. Determinations were then made for placement into high and low levels for the five variables. Cumulative frequencies were calculated and 10-15% of the respondents on the high and on the low end of scores for each variable were used for placement into the categories. The use of the upper and lower 10-15% of the scores to determine placement

into the high and low categories was done to capture those subjects in the sample most likely to truly represent high and low levels for each of the five variables. Stress cannot be avoided and is a part of every developmental period. Yet, every adolescent does not experience excess stress and strain and this study was interested in attempting to identify factors that may differ among those who exhibit higher or lower levels of stress and symptoms of psychological distress. The same was true for placement into the groups for type of coping and perceived emotional support. Since previous findings suggest that adolescents use a variety of coping strategies and emotional support is likely to exist within their relationships the focus was to identify those that differed on either end from the majority. Once the determination was made for the high and low levels for each of the applicable variables, chi square analyses utilizing the independent variables (gender, ethnicity and grade) were performed for all dependent variables (perceived stress level in school, perceived stress level out of school, symptoms of psychological distress, type of coping and perceived emotional support). Chi-square analyses were chosen because nonparametric statistics must be used when scores are from ordinal or nominal variables (Heiman, 1992), which was true for this data set.

In order to determine differences between adolescents that positively adjust to the stresses of adolescence as compared to those that experience signs of distress, subjects were placed in the following four adjustment groups based upon level of perceived stress in school and level of symptoms of psychological distress (Adjustment group 1) and labeled as follows:

High perceived stress in school/low symptoms of psychological distress (adapters)

High perceived stress in school/high symptoms of psychological distress (at risk)

Low perceived stress in school/low symptoms of psychological distress (positively adjusted)

Low perceived stress in school/high symptoms of psychological distress (negatively adjusted)

Subjects were also categorized into the following four groups based on their coping responses:

Problem focused coping—high on problem-focused coping and low on emotion-focused coping

Emotion focused coping—high on emotion-focused coping and low on problem-focused coping

High mixed coping—high on both problem focused and emotion focused coping

Low mixed coping—low on both problem focused and emotion focused coping.

Additionally, subjects were separated into groups depending upon their level (high and low) of perceived emotional support.

Analysis using chi square procedures was performed with adjustment group 1 and the four levels of coping. Then chi square procedures were carried out with adjustment group 1 and perceived emotional support.

Subjects were then placed in the four adjustment groups based upon the level of perceived stress outside of school and in the level of symptoms of psychological distress (Adjustment group 2):

High perceived stress outside of school/low symptoms of psychological distress (adapters)

High perceived stress outside of school /high symptoms of psychological distress (at risk)

Low perceived stress outside of school/low symptoms of psychological distress (positively adjusted)

Low perceived stress outside of school/high symptoms of psychological distress (negatively adjusted)

A second set of chi square procedures were performed with adjustment group 2, using the four types of coping. Chi-square procedures were also carried out with adjustment group 2, and the two levels of perceived emotional support.

LIMITATIONS OF THE STUDY

There are several limitations to the study that need to be considered. The survey relied on self-report and this may be affected by biases associated with the use of self-report instruments. Selection bias needs to be considered since the survey was completed on one day and subjects who were absent are not represented in the sample. There was no analysis performed to determine the differences between responders and non-responders so it is not known how they differ from the responders. Since the sample was a convenience sample, findings cannot be generalized. Limits based upon the quality of data focus on the use of the measures chosen for use in the questionnaire. The results based upon coping response need to be interpreted with caution since the measure was not event specific but based upon a generic "difficult situation." Factors such as controllability and changeability of the situation were not considered, yet according to findings in previous studies, both might potentially affect the type of coping response utilized. Findings related to perceived emotional support are also limited since emotional

support is only one aspect of social support, and there was no measure to determine the actual use of the social resources, or the effectiveness of the type of support provided. Finally, because the study is cross-sectional subjects were measured at only one point in time.

CHAPTER FOUR

FINDINGS

INTRODUCTION

This section provides a summary of the results from the data analyses described in Chapter 3. The study involved a secondary data analysis and all analyses were based upon the original data collected in April 1996. The results section includes a brief review of the data analysis and a description of the data. The findings related to the hypotheses are presented along with the findings addressing the research questions.

DESCRIPTION OF THE SAMPLE

The sample for the data analysis contained responses from 889 participants. The original study cited a sample size of N=921. Records missing more than one section were removed from the analysis. A frequency distribution was completed and findings concerning demographic and background information of the sample are described in Table 3.

Gender and grade were fairly evenly distributed while the majority of the sample is African-American (77%) with Caucasians (11%) representing the next largest group. Given the relatively low percentages of non-African-American respondents, the other ethnic groups were collapsed and ethnicity was defined for the data analysis as African-American (77%) and Other (23%)

Table 3: Demographics

Demographics		N (%)
Gender	Male	457(51%)
	Female	431(49%)
Grade	9th	216(24%)
	10th	245(28%)
	11th	227(26%)
	12th	194(22%)
Ethnicity	African-American	672(77%)
	Asian-American	47(5%)
	Caucasian	93(11%)
	Hispanic	9(1%)
	Other	56(6%)

A frequency distribution was conducted for all variables to allow for placement into high and low levels prior to the chi square procedures. The number of valid cases varied dependent upon the variable that was being measured and are shown in Table 4. Valid cases included all the cases that responses needed for the measurement of the variable were complete. The range was from 705 valid cases for perceived emotional support (variable 5) to 857 valid cases for problem-focused coping (variable 4A).

Cumulative frequencies were calculated and 10-15% of respondents on the high and low end of the scores for each variable were used for placement into the high and low categories. The decision to use the upper and lower 10-15% of the scores to determine placement in the categories was carried out in an attempt to capture those subjects in the sample most likely to truly represent high and low levels for each of the five variables. Table 5 provides the criteria used for placement into high or low categories based upon the frequency distribution and the sample size for each of the variables.

RESEARCH QUESTIONS

In order to answer the research questions and determine if an association existed between gender, ethnicity and grade and each of the variables, chi square analyses were conducted. Gender and ethnicity included two levels and grade included four levels. As previously reported, each of the other five variables had a high and low level. This resulted in 12 separate 2 x 2 chi square procedures and six 2 X 4 procedures which are listed in Table 6.

Table 4: **Number of valid cases**

Variable	Number of valid cases	Number of missing cases
Perceived Stress in School	840	49
Perceived Stress Outside School	807	82
Symptoms of Psychological Distress	821	68
Problem-focused coping	857	32
Emotion-focused coping	845	44
Perceived Emotional Support	705	184

Table 5: Criteria for Placement into high and low categories

Perceived Stress in School	Range of Scores (3 to 9) High >=7 Low <=3	N=177 N=103
Perceived Stress Out of School	Range of scores (7 to 21) High >=16 Low <=8	N=99 N=85
Symptoms of Psychological Distress	Range of scores (27 to 54) High >=44 Low <=29	N=96 N=122
Problem-focused Coping	Range of scores (8 to 24) High >=21 Low <=12	N=106 N=87
Emotion-focused Coping	Range of scores (15 to 40) High >=32 Low <=22	N=105 N=104
Perceived Emotional Support	Range of scores (10 to 20) High >=19 Low <=14	N=106 N=103

Table 6: Chi square procedures

Independent Variable		Independent Variable	Finding
Perceived Stress in school	and	Gender	NS
Perceived Stress in school	and	Ethnicity	NS
Perceived Stress in school	and	Grade level	NS
Perceived Stress outside of school	and	Gender	p < .001
Perceived Stress outside of school	and	Ethnicity	NS
Perceived Stress outside of school	and	Grade level	p < .002
Symptoms of Distress	and	Gender	p < .001
Symptoms of Distress	and	Ethnicity	NS
Symptoms of Distress	and	Grade level	NS
Problem focused Coping	and	Gender	p < .001
Problem-focused Coping	and	Ethnicity	NS
Problem-focused Coping	and	Grade level	p < .02
Emotion-focused Coping	and	Gender	NS
Emotion-focused Coping	and	Ethnicity	NS
Emotion-focused Coping	and	Grade level	NS
Perceived Emotional Support	and	Gender	p< .001
Perceived Emotional Support	and	Ethnicity	NS
Perceived Emotional Support	and	Grade level	NS

Eighteen tests of independence were conducted and of the eighteen tests, six were significant and twelve were not significant at a p< .05 significance level. Additional data for all significant findings are reported below.

Level of Perceived Stress outside of School (variable 2) was associated with both gender and grade level. Specific findings for both are reported in Table 7. The level of perceived stress outside of school differed significantly (p< .001) between males and females. More females (71%) reported higher levels of perceived stress out of school than did males (36%). Level of Perceived Stress outside of School also differed significantly (p < .002) by grade level. More 12th grade students (76%) reported higher levels of stress than 9th (37%), 10th (49%) or 11th graders (51%)

Symptoms of psychological distress differed significantly for gender. Gender was associated with symptoms of psychological distress (p < .001) and more females (62%) reported higher symptoms of psychological distress than males (26%). Table 8 presents the findings.

While emotion-focused coping was independent of gender, ethnicity and grade level, problem-focused coping differed significantly for both gender (p < .001) and grade level (p < .02). Table 9 shows that Females (77%) reported more problem-focused coping than by males (23%) and 12th graders (74%) reported more problem-focused than any other grade level. Problem-focused coping for other grade levels were as follows: 9th grader (47%), 10th graders (47%), and 11th graders (52%).

Table 7: Chi-square Analysis of Perceived Stress Level Outside of School by Sex and Grade Level

Perceived Stress Level Outside of School	High N (%)	Low N (%)
Gender		
Male	33 (36%)	58 (64%)
Female	66 (71%)	33 (29%)
Grade Level		
9th	15 (37%)	26 (63%)
10th	22 (49%)	23 (51%)
11th	24 (51%)	23 (49%)
12th	37 (76%)	12 (24%)

x2=22.3   df=1   p< .001

Table 8: Chi-Square Analysis of Symptoms of Psychological Distress by Gender

Symptoms of Distress	High N (%)	Low N (%)
Gender		
Male	29 (26%)	81 (74%)
Female	67 (62%)	41 (38%)

X2=28.1   df=1   p< .001

Table 9: Chi-square Analysis of Problem-focused Coping by Gender and Grade Level

Problem-focused Coping	High N (%)	Low N (%)
Gender		
Male	37(36%)	66(64%)
Female	69(77%)	21(23%)
Grade Level		
9th	22(47%)	25(53%)
10th	27(47%)	30(53%)
11th	21(52%)	19(48%)
12th	34(74%)	12(26%)

Gender: x2=32.2   df=1   p< .001   Grade Level: x2=9.3   df=3   p < .02

Another significant finding involved the level of perceived emotional support and its association with gender. Females (68%) reported higher levels of perceived emotional support than males (38%)(Table 10).

Additional Findings

An additional set of chi-square procedures were conducted with ethnicity re-defined as African-American (77%) and Caucasian (11%). The other minority groups were excluded and the two largest ethnic groups were used. There was one significant finding as a result of this set of analyses and symptoms of psychological distress differed significantly (p < .02) by ethnicity (x2=5.44 (1)). Caucasian students (65%) reported more symptoms of psychological distress than did African-American students (40%).

HYPOTHESES

Four hypotheses were also tested as part of the analysis and in order to test the hypotheses, additional analyses were conducted once subjects were placed in adjustment groups. Adjustment group 1 included subjects with high or low stress levels related to school (Variable 1) and symptoms of psychological distress (Variable 3). Four levels of adjustment were considered for adjustment group 1 and included the following:

High perceived stress /low symptoms of psychological distress (adapters)
High perceived stress /high symptoms of psychological distress (at risk)
Low perceived stress /low symptoms of psychological distress (positively adjusted)
Low perceived stress /high symptoms of psychological distress (negatively adjusted)

Table 10 Chi-square Analysis of Perceived Emotional Support by Gender

Perceived Emotional Support	High N (%)	Low N (%)
Gender		
Male	46 (38%)	75 (62%)
Female	60 (68%)	28 (32%)

$X2=18.5$ df=1 $p< .001$

Chi square procedures were performed using Adjustment Group 1 and Type of Coping (4 X 4) and Adjustment Group1 and Perceived Emotional Support (2 X 2). None of the test performed were found to be significant ($p < .05$) and adjustment group was independent of the type of coping and level of perceived emotional support. Specific findings from the analyses are found in Table 11.

The above analysis was repeated using Adjustment Group 2. Adjustment Group 2 contained subjects with non-school related perceived stress levels and symptoms of psychological distress. The same four levels of adjustment were considered. Chi square procedures were conducted using Adjustment Group 2 and Type of Coping (4 X 4) and Adjustment Group 2 and Perceived Emotional Support (4 X 2). Again, none of the tests were found to be significant ($p<.05$) and an association was not found with adjustment group and type of coping and adjustment group and perceived emotional support. Findings from the chi square procedures are presented in Table 11. Sample sizes for the adjustment group analyses ranged from N=11 to N=30. The adjustment group findings will be reported as they relate to each of the four hypotheses of the study.

Hypothesis One

High stress, low symptom adolescents will report greater utilization of problem- focused coping and higher levels of perceived emotional support than high stress, high symptom adolescents.

Table 11: Chi-square analysis of Adjustment Groups with Type of Coping and Perceived Level of Emotional Support

	N	X2/(df)
Adjustment Group 1 X Type of Coping (4 X4)	11	8.48 (4)
Adjustment Group 1 X Perceived Emotional Support (4 x2)	30	3.16(3)
Adjustment Group 2 X Type of Coping (4 X 4)	14	10.30(4)
Adjustment Group 2 X Perceived Emotional Support (4 X 2)	26	1.35 (2)

Respondents who reported high levels of perceived stress but low symptoms of psychological distress were labeled "adapters". There was no association found and no significant difference (p> .05) between adjustment group (1 or 2) and type of coping or level of perceived emotional support (Table 11).   Hypothesis one was not supported.

Hypothesis Two

High stress, high symptom adolescents will report greater utilization of emotion-focused coping and lower levels of perceived emotional support than high stress, low symptom adolescents.

The high stress, high symptom adjustment group was labeled "at risk" due to reported high perceived stress levels and high reported symptoms of psychological distress. The results for the chi square analyses with both adjustment groups and type of coping and adjustment groups and perceived emotional support was reported in Table 11 above. Again, there was no association found and no significant difference (p> .05) between adjustment group (1 or 2) and type of coping or level of perceived emotional support.   Therefore, no support was found for hypothesis two.

Hypothesis Three

Low stress, high symptom adolescents will report greater utilization of emotion-focused coping and lower levels of perceived emotional support than high stress, low symptom adolescents

Hypotheses three focused on the low stress high symptom group labeled as "negatively adjusted". The subjects reported low levels of perceived stress but high

levels of symptoms of psychological distress. Findings of the chi square analyses

conducted are reported in Table 11. As previously stated, there was no association found

and no significant (p ><.05) difference between adjustment group (1 or 2) and type of

coping or level of perceived emotional support.   Therefore, hypothesis three was not

supported.

Hypothesis Four

Low stress, low symptom adolescents will report greater utilization of problem-focused

coping and higher levels of perceived emotional support than low stress, high symptom

adolescents

  Low stress level and low symptoms subjects were labeled "positively adjusted"

due to low reported perceived stress levels and low symptoms of psychological distress.

Results from chi square procedures with both adjustment groups are found in Table 11.

There was no association found and no significant (p > .05) difference between

adjustment group (1 or 2) and type of coping or level of perceived emotional support.

No support was found for hypothesis four and the hypothesis was rejected.

SUMMARY

  Findings were presented for the analyses performed to answer the research

questions and test the hypotheses. Significance was found for six out of eighteen chi

square procedures examining gender, ethnicity and grade with all of the defined

variables. An additional set of analyses with ethnicity defined as African-American and

other produced one additional significant finding. Tests with the adjustment groups designed to test the hypotheses produced no significant results. Overall, the findings of this study do not indicate that the type of coping response utilized or the availability of perceived emotional support served as mediating variables in the relationship between perceived stress levels and symptoms of psychological distress. The study did find that a relationship exists with gender and ethnicity in terms of symptoms of psychological distress. A relationship also existed between gender and type of coping and gender and perceived emotional support. Perceived stress outside of school was related to both gender and grade. No significant relationship was found in type of coping and perceived emotional support once the subjects were placed in the various adjustment groups.

CHAPTER FIVE

DISCUSSION, RECOMMENDATIONS AND CONCLUSIONS

INTRODUCTION

The purpose of this study was to examine the relationship between coping responses, perceived emotional support and mental health related outcomes in high school adolescents. The study also attempted to ascertain if the type of coping utilized, perceived availability of emotional support, levels of perceived stress (in and out of school) and symptoms of psychological distress varied by gender, ethnicity and grade level.

Four hypotheses were presented and tested by placing subjects into adjustment groups based upon levels of perceived stress (high and low) and levels of psychological distress (high and low). The hypotheses were based upon studies in the literature that found that type of coping and availability of social support serve as protective factors for adolescents in the development of symptoms of psychological distress. One objective of the study was to determine if differences existed in the type of coping used or if the perceived level of emotional support differed among adolescents with high and low levels of psychological distress and high and low levels of perceived stress. However, in this study the hypotheses were not supported. There was no significant relationship between either of the adjustment groups and the type of coping used or the adjustment groups and perceived emotional support. Possible explanations for these results are discussed in this chapter.

Several research questions were also developed to explore the relationship between gender, ethnicity and grade level and each of the dependent variables (perceived stress levels, symptoms of psychological distress, type of coping and perceived emotional support). Significant findings related to the research questions are also discussed. Additionally, recommendations for health education and for future research are presented.

Discussion of Findings Related to Hypotheses

The study of factors that may mediate the relationship between excess stress and possible negative mental health related outcomes are essential and can contribute to the successful adaptation of the adolescent. Several studies have found that coping skills and social resources serve as protective factors or factors that buffer the effects of high stress and reduce the potential for negative health outcomes (Herman-Stahl & Petersen, 1996) Previous studies have also found that problem-focused coping is associated with more successful outcomes and positive adjustment (Ebata & Moos, 1991, Ebata & Moos, 1994, Fields & Prinz, 1997, Prinz, Shermis & Webb, 1999, Windle & Windle, 1996) while emotion-focused coping has been associated with increased feelings of distress and negative adjustment (Curry, Miller, Waugh & Anderson, 1992, Ebata & Moos, 1994), In terms of emotional support, studies suggest that the availability of emotional support provides a buffer from stress and is inversely related to symptom patterns (Gore & Aseltine, 1995, Licitra-Kleckler & Waas, 1993, Seward et al. 1998, Yarcheski & Mahon, 1986). The predictions made in the four hypotheses were based on these findings.

Adjustment groups were created in order to test the hypotheses and once high and low levels were determined for perceived levels of stress, symptoms of psychological distress, type of coping and level of perceived emotional support, subjects were placed into the adjustment groups. Adjustment group 1 categories were developed based on respondent's levels of perceived stress in school and their levels of psychological distress. Four adjustment levels were identified in an effort to examine differences in the type of coping and level of perceived emotional support used by each group. The four adjustment groups consisted of "adjusters", "at risk", "positively adjusted" and negatively adjusted" subjects. The same combinations were used for Adjustment Group 2 but high and low stress levels were based upon perceived stress for life outside of school as opposed to in school. Chi square analyses were performed for adjustment group 1 and 2 with four combinations of the type of coping and two levels (high and low) of perceived emotional support. No significant relationship was found for either group with either of the dependent variables (type of coping or perceived emotional support). Again, none of the four hypotheses were supported.

While the findings were inconsistent with previous research, several factors may account for them. First, the sample size may have been too small to produce statistical significance. Sample sizes for the adjustment group analyses ranged from 11 to 30. The criteria set for placement in various levels of the variables may have been too stringent but the study was attempting to differentiate between expected levels of the variables and true high or low levels to distinguish between those subjects experiencing the normal ups and downs of adolescence from those at risk for high distress or psychopathology. Since

depressive symptoms in adolescents may be a transient developmental phenomenon (Lefkowitz & Burton, 1978) the goal was to capture those students experiencing significant high or low levels of distress.

Second, few subjects met the set criteria for any of the four coping groups. Again, the limits established for placement into the coping groups were set to clearly define subjects that primarily used one form of coping over the other or used a high mix or low mix of both. Since adolescents appear to use multiple coping strategies when facing a stressful situation (Halstead, Johnson & Cunningham 1993) and several studies have shown that adolescents use both types of coping, emotion-focused and problem-focused when dealing with stress, the goal was to set limits that would identify subjects above the expected use. A review of the frequency distribution for the study sample revealed that the students did use all types of coping styles fairly often.

Third, previous studies have suggested that periods of high stress may affect the use of coping skills and coping resources. In a study conducted by Herman-Stahl and Petersen (1996) the high adversity groups appeared compromised by the high level of stress in their lives and any advantage in coping skills and resources seemed to have been lost with higher levels of stress. When psychological distress or stress is too high, adolescents may no longer see options for coping or available resources. This may provide a possible explanation for the lack of findings in high stress adjustment groups. It may also be that low stress levels result in a perception that less coping strategies and resources are needed but research in this area would be required.

Discussion of Findings Related to the Research Questions

This study also examined the relationship of gender, ethnicity and grade to the level of perceived stress in and out of school, level of symptoms of psychological distress, type of coping response, and level of perceived emotional support experienced by participants. Significant relationships (p < .05) were found for several variables and these are discussed here.

Gender and Perceived Stress Outside of School

There was a significant relationship with gender and stress levels outside of school, with more females (66%) showing higher levels of perceived stress out of school than males (36%). This finding is consistent with a previous study by Dornbusch, Mont-Reynaud, Ritter, Chen & Steinberg, (2000), which found that females may experience higher stress levels in response to personal stressors rather than academic ones. Additional studies have also shown that females not only tend to report more stressful events than males (Groer, Thomas, & Shoffner, 1992, Wagner & Compass, 1990, Ystgaard, 1996) but they also report more interpersonal stressors (Halstead, Johnson, & Cunningham, 1993, Seiffge-Krenke, 1995, Stark, Spirito, Williams & Guevremont, 1989). Females also report more concerns about body image than boys (Puskar & Lamb 1991). Since there were more items used in the survey to measure stress levels outside of school (6) than in school (3), the additional items allowed for more detail about the types of stressors that may contribute to the perceived stress level. Questions were asked about how stressed students were about major problems in the family (divorce, illness, deaths,

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unemployment), how often they worried about the money situation in their family, how often they felt stressed by after school chores or their job and how often they worried about appearance (attractiveness or looks) and their friends well-being, health and safety. The majority of these stressors involved personal or relationship stressors. This finding suggests that for school programs to effectively address stress levels for female students, the programs must also include coping information on non-school related stressors.

Grade Level and Perceived Stress Outside of School

When out of school stress levels were examined by grade level, a significant relationship was found. More 12th graders (76%) reported higher levels of stress than any other grade level. This finding is supported by the literature; for example, Groer, Thomas and Shoffner (1992) found in their longitudinal study of students that stress increased over time for both males and females. Stark, Spirito, Williams and Guevremont (1989) also found that the stressors encountered by younger adolescents (14-15 years) were more focused on parents and school while the stressors for the older adolescents (16-17 years) were more diverse and focused more on future issues. New demands require new ways of coping and as the diversity of stressors increase, adolescents will need to become aware of and use additional coping skills (Compass, 1987).

Gender and Psychological Distress

Gender again played a role and showed a significant relationship with level of psychological distress. This study found that more females (62%) experienced higher levels of symptoms of psychological distress than did males (26%). This finding is not

surprising and numerous studies support that females experience more psychological

distress than males (Colton, Gore, Aseltine, 1991, Dubow, Lovko, & Kausch, 1991,

Ebata & Moos, 1994, Eiser, Havermans, & Eiser, 1995, Herman & Lester, 1994,

Lewinsohn, et al. 1993, McCauley, Carlson & Calderon 1991, Rubin, et al., 1992).

Several factors have been suggested to explain this finding and are discussed below.

Gender differences in timing of puberty in combination with the normative timing

of the transition to secondary school (middle and high school) may contribute to the

emergence in early adolescence of the gender differences in emotional distress and

depression. For girls, maximum pubertal changes may be occurring during this time

frame (Rice, Herman & Petersen, 1993). Females also seem to be caught up in a special

dilemma—when experiencing interpersonal conflict with significant others they are more

stressed by it than boys but at the same time they more often applied coping strategies

that required using these same social relations (Seiffge-Krenke, 1995).

Another possible explanation is that the existence of gender differences in

depression does not necessarily imply that females are more distressed but rather that

males and females are predisposed or socialized to different sex-role congruent

expressions of distress. Girls may be socialized toward "internalizing" stress while boys

may be socialized to "externalize" stress (Colten, Gore, Aseltine 1991). An internalizing

orientation is cognitive, emotional or psychosomatic and these constructs were reflected

in the measure of distress for this study. However, one study found that while sex

differences in distress peaked at age 15 and disappeared at age 21 years, the relationship

between gender identity and distress became stronger. The conclusion was that it is not so much if one is male or female but how one identifies with masculine or feminine traits that were more powerfully related to distress (Horowitz & White 1987). Compass, Orosan & Grant (1993) believe that the entire process of stressful events and coping responses may predispose adolescent females to greater depressive outcomes because they are more likely to encounter biological/social changes in conjunction with interpersonal stress, they may be more responsive to the effects of social or network stress and they may be more likely to respond to these stressors with an emotionally attentive or ruminative coping style.

The studies and work done by Nolen-Hoekesema (1987, 1994) and others (Broderick, 1998, Nolen-Hoekesema & Girgus, 1994) may offer an additional rationale for the finding of increased levels of psychological distress in females. She proposed that females predisposition to psychological distress may be in relation to rumination which interferes with attention, concentration and the initiation of instrumental behaviors (Nolen-Hoekesema, 1987). Rumination focuses the individual on her emotional state and inhibits actions that might distract from mood (Broderick, 1998). Summerfeldt and Endler (1996) state that rumination may usefully be conceptualized as a misguided attempt at coping through regulation of affect leading one to focus passively on depressive symptoms and the meaning of those symptoms. Given the fact that adolescent females are more at risk for experiencing distress, issues related to the increase risk and the role of factors such as rumination need to be examined and addressed.

Gender and Type of Coping

Analysis of gender and type of coping produced interesting findings. A significant relationship existed between gender and type of coping, with more females (74%) reporting higher use of problem-focused coping than males (36%). This finding was somewhat surprising since multiple studies have found that female adolescents are more likely to use emotion-focused coping than are males ((Blanchard-Fields, Sulsky, Robinson-Whelan, 1991, Frydenberg & Lewis, 1991, Olah, 1995, Phelps & Jarvis, 1994, Recklitis & Noam, 1999, Seiffge-Krenke & Shulman, 1990, Windle & Windle 1996). However, studies on the role of gender and the type of coping have not been consistent and other studies have found that females use the same or more problem-focused coping strategies than males (Ebata & Moos, 1991, Ebata & Moos, 1994, Herman-Stahl, Stemmler & Petersen, 1995, Jogensen & Dusek, 1990, Pollard, 1993, Seiffge-Krenke, 1993). Frydenberg & Lewis (1991,1993) found that females used more problem-focused coping than males but were more fatalistic and resigned to circumstances and used more wishful thinking and seeking social support. Further research is needed but it may be that the type of emotion-focused coping used may make a difference.

The finding in this study may also be related to ethnicity and reflect differences in type of coping for African-American females. While studies are lacking, Pollard (1993) found that contrary to many studies with Caucasians, female African-American students engaged in more problem-focused coping than did African-American males.

Another reason this finding is interesting is that females in this study were also more likely to have higher perceived outside of school stressors and higher levels of symptoms of psychological distress. This study is unable to determine if a relationship exists between the type of coping and symptoms of psychological distress but previous studies have found that symptoms of psychological distress have generally been associated more with the use of more emotion-focused coping (Compass, Malcarne & Fondacaro, 1988, Curry, Miller, Waugh & Anderson, 1992, Ebata & Moos, 1991, Fields & Prinz, 1997, Recklitis & Noam, 1999, Windle & Windle, 1996).

Even though female adolescents in this study reported higher use of problem-focused coping, which has been associated with more successful outcomes and positive adjustment (Ebata & Moos, 1991, Ebata & Moos, 1994, Fields & Prinz, 1997, Hoffman, Levy-Schiff, Sohlberg & Zarizki, 1992, Printz, Shermis, Webb, 1999, Windle & Windle, 1996), they also reported higher levels of perceived stress outside of school. Again, this study could not determine if a relationship existed between these two variables but the findings seem to contradict each other and further research is needed. Other factors, such as the type of stressors experienced, may be playing a role in the type of coping used. Some studies have found that problem-focused coping is more likely to be used in situations appraised as controllable and challenging and emotion-focused coping more likely to be used in situations involving perceptions of threat, harm-loss, or uncontrollability (Ebata & Moos, 1994, Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen 1986, Lazarus & Folkman, 1984). The actual event and the appraisal of that event in terms of the possibility for change plays a role in the type of coping used. The event

and the appraisal of the stressfulness of the event by the individual also contributes to the effectiveness of the type of coping utilized. According to Lazarus & Folkman (1985) coping is effective if it is appropriate to the internal and external demands of the situation. A mismatch between the preferred style of coping and coping that is actually used in a particular situation is likely to reduce coping effectiveness. The type of coping used in response to specific types of stressors was not measured in this study so it is not known if the type of stressors experienced by females differed from those experienced by males or how the stressors differed in terms of controllability or changeability.

Grade Level and Coping

The use of problem-focused coping differed significantly by grade level, with 12th graders (74%) reporting the highest levels of problem-focused coping. Though some studies have found no clear pattern of age differences in the type of coping (Herman-Stahl, Stemmler & Petersen, 1995, Seiffge-Krenke, 1995), other studies have found that cognitive type coping increases with age and older adolescents relied more on approach or problem-focused coping (Ebata & Moos, 1991, Ebata & Moos, 1994, Seiffge-Krenke, 1993, Seiffge-Krenke & Schulman, 1990, Recklitis & Noam, 1999). The finding from this study is of interest since this study also found that level of perceived stress related to stressors outside of school was also higher in 12th graders. While it is beyond the scope of this study to determine if the higher levels of problem-focused coping are related to the higher levels of perceived stress, further study in this area would be helpful.

Gender and Perceived Emotional Support

The final significant relationship was with gender and perceived emotional
support. More females (68%) reported high levels of perceived emotional support than
males (38%). More males (62%) reported low levels of perceived emotional support than
did females (38%). Sample size does not seem to be a factor as 209 respondents
completed the items for this analysis. It is not surprising that females reported higher
levels of perceived emotional support since multiple studies support this finding
(Frydenberg, 1997, Greenberger & McLaughlin, 1998, Recklitis & Noam, 1999, Seiffge-
Krenke & Shulman, 1990,Slavin & Rainer, 1990) This finding has also been supported
for African-American females (Munsch & Wampler, 1992 ,Pollard, 1973) Since
emotional support is considered a social resource, it is interesting that females in this
study also reported more symptoms of psychological distress. There could be several
possible explanations for this finding. One explanation may be that emotional support
does not buffer stress for females. Gore & Aseltine (1995) found that there was no stress
buffering effect for females and strong involvement with friends may amplify effects of
stress. Ystgaard (1996) surmised that girls are doubly disadvantaged in social
relationships. They report more problems and are more emotionally responsive to them.

The sharing/venting of emotion or the availability of perceived emotional support
may also serve as a verbal form of rumination for females. Venting and sharing of
emotions might allow the female to continue to stay focused on emotions and mood and
inhibit actions that may be more likely to work on the problem. It is also possible that the

higher level of perceived emotional support for females found in this study may actually represent a form of emotion- focused coping.   In a study done by Phelps & Jarvis (1994) with high school students, females reportedly used "seeking social support" for both instrumental and emotional reasons and they were found to be empirically distinct .The seeking of social support for instrumental reasons loaded on the active coping factor and seeking social support for emotional reasons loaded on venting of emotions on the emotion-focused coping factor. Further research is needed in this area.

The finding of higher levels of perceived emotional support in females may also be related to the component of social support that was incorporated in this study since studies suggest that females are more likely to receive emotional support.   Munsch & Wampler (1992) found in their study, females reported more emotional support and more emotional regulation than did males and males received more instrumental support, problem-solving help, distraction and risk-taking activities than did females. Slavin and Ranier (1990) also found that female adolescents report more emotional support from both non-family adults and peers than do male adolescents. Additionally, studies support that females use all types of social support more frequently than males (Frydenberg, 1997, Greenberger & McLaughlin, 1998, Recklitis & Noam, 1999).

DISCUSSION OF FINDINGS ON ADDITIONAL ANALYSES

Ethnicity and Psychological Distress

A significant relationship for ethnicity and psychological distress was found when additional analyses were performed with ethnicity re-defined. As reported in Chapter

four, Caucasian students (65%) experienced higher symptoms of psychological distress than African-American students (40%). While studies are lacking the finding from this analyses does not support findings from previous studies. Garrison, Schlucter, Schoenbach & Kaplan (1989) found that the highest prevalence of depressive syndromes were in African-American adolescents however the percentage of Caucasian adolescents for this study was 80% and only 20% of subjects were African-American. In a longitudinal study of high school students conducted by Garrison, Jackson, Marstellaer, McKeown and Addy (1990), African-Americans students generally had higher depressive scores than Caucasians. Again, the population for their study was 87% Caucasian as compared to the population of high school students for this study which was predominantly African-American (77%). In this study the Caucasian students were the minority (11%). Perhaps being a member of a minority group, regardless of the actual racial composition of that group, is what causes the increase in psychological distress. Future studies, which attempt to replicate this finding and explore factors that may contribute to the higher levels of distress, are needed.

LIMITATIONS OF THE STUDY

The study was cross sectional in design and relied on self-report for the measurement of all variables. The measure used for the type of coping reflected more of a coping style than coping responses to a particular stressful event. Since the actual stressors were not defined it was not possible to examine the nature of the stressor (e.g. controllable or uncontrollable) and that may have influenced the type of coping utilized. Since psychological distress was the only measured outcome the findings may not be as

applicable to males since the focus was on internalizing symptoms rather than externalizing behaviors. The study involves a predominantly African-American urban high school population and does not represent all high schools.

RECOMMENDATIONS FOR FUTURE RESEARCH

Further research with adolescents examining gender differences in the types of coping and the use of various types of social support is necessary. Although most adolescents go through the teen years adapting successfully, feelings of distress may be common and the rate of diagnosable disorders are increasing. While distress may be transient and reflect temporary conditions some may be displaying long term adjustment problems—the ongoing study of factors that moderate stress may begin to allow us to identify those at risk, designing interventions and provide resources to enhance coping efforts (Ebata & Moos, 1994). Research on the concept of "resilience" has much to offer in this area. Individuals that are able to overcome adversity and "bounce back" can provide valuable information into protective factors that can make a difference. Garmezy (1993) categorized protective factors into three types: 1) temperament factors (e.g. autonomy, self-esteem, a positive social orientation), 2) families, especially those exhibiting cohesion, warmth and at least one caring adult, and 3) the availability of external social support that encouraged and reinforced coping efforts. Protective factors found by Werner (1992) in a comprehensive longitudinal study on resilience included high self-esteem, an internal locus of control, and a variety of sources of social support. Studies designed to determine the differences between those adolescents who successfully negotiate the adolescent years and those that are at high risk for health related outcomes

continue to be needed and expanded to included additional factors. According to

Summerfeldt & Endler, (1996) a highly influential group of coping researchers has

repeatedly de-emphasized dispositional facets of coping and limited the inclusion of these

factors in coping research.

Further in depth analysis on the relationship between the type of coping and

symptoms of psychological distress would also be of value. A comparison in symptoms

of psychological distress between individuals who primarily use problem-focused coping

and those who use primarily emotion-focused coping would provide additional

information. More longitudinal studies are needed and while cross sectional studies are

useful in establishing that there is an association between stress or psychopathology it is

worthwhile to pursue more costly longitudinal investigations (Compass, Orosan & Grant

1993). Further examination and studies that include measurement of issues related to

emotion-focused coping such as rumination, distraction and wishful thinking would be

helpful.

Most importantly, additional studies are needed with minority populations. A lack of

research exists in this area and there is too little data on minority adolescent behavior and

development (Jessor, 1993, Phinney & Chavira, 1995). Further understanding is needed

concerning African-American adolescent coping methods to explain the processes

underlying the suspected stress-related behavioral and physical symptoms (Rosella &

Albrecht, 1993). The current theoretical knowledge upon which to design interventions

for stress related behavioral and physical symptoms is lacking in minority groups. (Rosella, 1994).

REOMMENDATIONS FOR HEALTH EDUCATORS

Programs which address general coping skills combined with situation specific strategies would be beneficial since evidence shows the prevalence and significance of multiple stressors in adolescence (broad range of interpersonal and intrapersonal domains), increases in a variety of contexts (Windle & Windle 1996). Issues and differences related to gender, age and ethnicity must also be incorporated. Efforts to develop an early adolescent intervention program designed specifically to prevent the development of psychological distress and depression is important since accepting therapeutic help as a coping strategy was seen by only 9% of a sample of non-clinical adolescents as an acceptable alternative in case of a pressing problem (Seiffge-Krenke 1993). Prevention is therefore of paramount importance. Preventive services/programs can be delivered to all adolescents on the basis that all are at some risk of exposure to psychological distress if not to the development of depressive disorders. In addition, adolescents with symptoms of psychological distress can be selectively targeted for intervention. Services can be delivered to those at greatest risk and with greatest need (Petersen, Compass, Brooks-Gunn, Stemmler, Ey & Grant 1993). Schools are in a key position to help adolescents learn effective coping skills by offering preventative interventions and coping skill training curriculum (Hess & Richards 1999).

Programs for students in higher grades need to include coping skills that deal with a more diverse set of stressors and programs for females need to put additional emphasis on interpersonal stressors. Problem-focused and emotion-focused coping strategies need

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to be included. The contribution of the coping strategy (e.g.rumination) to successful

adaptation needs to be discussed. Programs and curriculum related to the importance of

establishing support networks that can provide a variety of support functions are also

needed. Skill development in the maintenance of positive social relationships would also

be of benefit and gender differences need to be taken into account. Finally, since parents

and adults are considered a valuable source of support for adolescents (Dubow, Lovko &

Kausch, 1990, Munsch & Wampler, 1993, Seiffge-Krenke, 1995) programs that find

ways to enhance those relationships would be beneficial.

CONCLUSION

In conclusion, the findings of the study did not support the stated hypotheses and

several possible explanations were provided. Significant findings related to gender and

symptoms of psychological distress, levels of perceived emotional support, perceived

stress levels outside of school and type of coping were discussed as well as the significant

findings for ethnicity and grade level. Limits of the study were included as well as

recommendations for future research and for health educators. Finally, while many of the

findings were not unique from those of previous studies, the findings did add to the

existing research involving African-American adolescents. Continued research that

explores questions related to factors that mediate the relationship between stress and

negative health outcomes continues to be needed but to be of benefit to all adolescents it

must be inclusive of all adolescents.

APPENDICES
APPENDIX A

<u>DO NOT WRITE YOUR NAME ON THIS QUESTIONNAIRE</u>

SECTION 1. PERSONAL INFORMATION
Please read carefully and answer each question.

1. What is your sex?

   Male 1
   Female 2

2. How old are you?

   (# of years) . . . . . __ __

3. What is your ethnic background?

   African-American 1
   Asian-American 2
   Caucasian (White) 3
   Hispanic 4
   Other 5

4. What grade are you in?

   9th (Freshman) 1
   10th (Sophomore) 2
   11th (Junior) 3
   12th (Senior) 4

5. Which school program are you in?
   (CIRCLE ONLY ONE)

   Basic or Standard 1
   G.T. or Honors 2
   Magnet 3
   Special Education 4
   Co-op 5

6. Circle the grades you get the most, in general.
   (CIRCLE ONLY ONE)

   A's 1
   B's 2
   C's 3
   D's 4
   E's 5

7. How many different <u>high schools</u> have you attended?   (# of H.S.)

8. Have you ever seriously thought about
   dropping out of school?

   No 0
   Yes 1

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9. Have you had to repeat a grade in high school?

No 0
Yes 1

10. What is your academic or career goal
immediately following high school?
(CIRCLE ONLY ONE)

2 year Associates' Degree ... 1
4 year Bachelors' Degree 2
Trade school 3
The military 4
Work/Get a job 5
Don't know 6
Other (what?_____) 7

11. Do you have a job in which you earn money?

No 0
Yes 1

12. Do you do volunteer work?

No 0
Yes 1

13. How many hours per week do you work?
(BOTH VOLUNTEER AND PAID WORK)

(# of hours)

14. Do you live with both of your parents
full time?

No 0
Yes 1

15. Do you have a steady girlfriend or boyfriend?

No 0
Yes 1

16. Are you sexually active (do you have sex)?

No 0
Yes 1

17. IF YES, do you use a condom
EVERY TIME you have sex?

No 0
Yes 1
Not every time 2
I'm not sexually active 9

18. If you are sexually active, do you use any form
of birth control other than a condom?

No 0
Yes 1
I'm not sexually active 9

19. Have you had a major illness during the past two years?
(For example, one where you had to visit the doctor often or
stay in the hospital)

No 0
Yes 1

20. How would you rate the security of

Very Poor 1

your school? (circle one)

Poor	2
Fair	3
Good	4
Excellent	5

21. In the past 6 months, have you had any serious accidents?
(for example, a car accident)

No	0	s21
Yes	1	

22. IF YES, did your serious accident result in
a doctors or hospital visit?

No	0	s24
Yes	1	
Not Applicable	9	

23. Have any close family members recently had
health problems?

No	0	s25
Yes	1	
Don't Know.	8	

SECTION 2: PERSONAL ISSUES
Please circle the number that best describes
how often you have the following feelings.

Never/Almost Never	Some of the Time	Most of the Time

1. How often do you feel you are in danger from:

a. Gangs at school	1	2	3	s26-31
b. Students with weapons (in any grade/class)	1	2	3	
c. Trespassers (unauthorized visitors) at school	1	2	3	
d. Teachers	1	2	3	
e. Schoolmates	1	2	3	
f. Parents	1	2	3	

2. How often do you feel stressed out (overwhelmed) by:

a. the amount of school work you have	1	2	3	s32-36
b. your other school-related activities (sports, clubs, music, etc.)	1	2	3	
c. after-school chores at home (housecleaning, watching a brother/sister)	1	2	3	
d. your job	1	2	3	
e. major problems in your family (divorce, illness, deaths, unemployment)	1	2	3	

3. How often do you feel that you're treated unfairly at school
because of:

a.	your gender	1	2	3
b.	your race	1	2	3
c.	your religion	1	2	3
d.	your sexual orientation	1	2	3
e.	your weight or appearance	1	2	3
f.	your intelligence	1	2	3

Rarely or Never	Some of the time	Most of the Time
		3

4. How often do you feel pressured to get good grades:

a.	by parents	1	2	3
b.	by relatives other than your parents	1	2	3
c.	by fellow students	1	2	3
d.	by teachers	1	2	3
e.	by yourself	1	2	3

5. How often do you feel bothered by:

a.	classes that are too large or overcrowded	1	2	3
b.	teachers showing favoritism	1	2	3
c.	temperatures in the building that are uncomfortable	1	2	3
d.	the condition / cleanliness of the bathrooms	1	2	3
e.	the time you are given to use the bathrooms	1	2	3
f.	the quality of the air you breathe (due to smoking, bad odors)	1	2	3

6. How often do you worry about:

a.	the money situation in your family?	2	3
b.	your friends' well being (health, safety, emotions)?	2	3
c.	your appearance (your attractiveness or "looks")?	2	3

7. Do you _ever_ worry about:

		NO	YES
a.	becoming pregnant or getting someone pregnant?	0	1
b.	getting a sexually transmitted disease (Herpes, "the Clap", etc.)?	0	1
c.	getting AIDS?	0	1

8. Have you felt pressured from any classmates in high school:

		NO	YES
a.	to have sex?	0	1
b.	to use illegal drugs?	0	1
c.	to smoke cigarettes?	0	1
d.	to drink alcohol?	0	1

9. Have you ever experienced _in high school_:

		NO	YES
a.	unwelcome sexual advances or comments from other students?	0	1
b.	unwelcome sexual advances or comments from people who work at your school?	0	1
c.	verbal abuse (insults) from teachers?	0	1

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Do you feel you can talk to (share your emotions with...):

		NO	YES	
a.	your teacher(s)	0	:	12-0
b.	your parent(s)	0	:	
c.	your friend(s)	0	:	
d.	your brother(s)/sister(s)	0	:	
e.	your relative(s)	0	:	
f.	someone else (who?_____)	0	:	

	Rarely ever	Some of the time	Most of the time

In the **PAST SIX MONTHS**...

1.	I have not wanted to go to school.	1	2	3	>-
2.	I've felt frustrated in doing my schoolwork.	1	2	3	>-
3.	I've enjoyed the work I do in class.	1	2	3	>-
4.	I've wanted to escape from the constant demands on my time and energy at school.	1	2	3	>-
5.	I've felt negative, hopeless, or depressed about school.	1	2	3	>-
6.	Work in class is just busy work and a waste of time.	1	2	3	>-
7.	I've felt like I'm getting a lot done.	1	2	3	>-
8.	The quality of my work has been less than it should be.	1	2	3	>-
9.	I've felt I can go to my teachers with things that are on my mind.	1	2	3	>-
10.	Schoolwork is dull and boring for me.	1	2	3	>-
11.	My interest in doing fun activities has been lowered.	1	2	3	>-
12.	I've been feeling uncaring about the problems and needs of others.	1	2	3	>-
13.	When I talk with my teachers, friends, or family, it seems strained or uncomfortable.	1	2	3	>-
14.	My teachers really listen to what I have to say.	1	2	3	>-
15.	I am happy when I'm at school.	1	2	3	>-
16.	My teachers want me to do things their way and not my own way.	1	2	3	>-
17.	My teachers understand me.	1	2	3	>-

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		Rarely or Never	Some of the Time	Most of the Time	
18.	When I've asked myself why I get up and go to school, the only answer that occurs has been "I'm forced to".	1	2	3	tts
19.	I've had the opportunity to talk to my friends at school.	1	2	3	tts
20.	I've liked school very much.	1	2	3	ttc

SITUATION & COPING STYLES

Please circle the answer that best describes how you would handle the situation.

		Rarely or Never 1	Some of the Time 2	Most of the Time 3	

1.	Try to see the positive side of things?	1	2	3	u
2.	Try to step back from a situation and be more objective (look at it from a different point of view)?	1	2	3	xc2
3.	Pray for guidance and strength?	1	2	3	s
4.	Take things one step at a time?	1	2	3	u
5.	Consider several alternatives for handling a problem?	1	2	3	t25
6.	Draw on past experiences (what you've done in a similar situation before)?	1	2	3	t25
7.	Try to find out more about the situation?	1	2	3	tz7
8.	Talk with a professional person (teacher, doctor, minister, counselor) about the situation?	1	2	3	t2s
9.	Take some positive action?	1	2	3	t29
10.	Talk with your parents or other relative about the problem?	1	2	3	t30
11.	Talk with a friend about the situation?	1	2	3	t31
12.	Exercise more?	1	2	3	t32
13.	Prepare for the worst?	1	2	3	t33
14.	Take out your frustration on other people because you feel angry or depressed?	1	2	3	t34
15.	Try to reduce the tension by eating more?	1	2	3	t35
16.	Try to reduce the tension by smoking more?	1	2	3	t36
17.	Try to reduce the tension by drinking alcohol?	1	2	3	t35

Remember: ALL your answers are COMPLETELY CONFIDENTIAL!

18.	Try to reduce the tension by sleeping more?	1	2	3	ᵇ⁸
19.	Keep your feelings to yourself?	1	2	3	ᵇ⁹
20.	Work on other things to keep your mind off the problem?	1	2	3	ᵇ⁴⁰
21.	Not worry about it and figure everything will probably work out fine?	1	2	3	ᵇ⁴¹
22.	Go shopping and buy yourself nice things (clothes, jewelry, etc.)?	1	2	3	ᵇ⁴²
23.	Spend extra time watching TV or playing video games?		2	3	ᵇ⁴³

SECTION 5: HEALTH ISSUES

Please circle a 0 or 1 and the number next to each question for each of the following questions:

			NO	YES	
1.	Felt well and in good health		0	1	c1
2.	Headaches		0	1	c2
3.	Nervousness or shakiness inside		0	1	c3
4.	Lost much sleep over worry		0	1	c4
5.	Felt that life is not worth living		0	1	c5
6.	Felt ill		0	1	c6
7.	Felt low in energy or slowed down		0	1	c7
8.	Thoughts of ending your life		0	1	c8
9.	Felt useless		0	1	c9
10.	Been unable to do something because you were so nervous		0	1	c10
11.	Feelings of being trapped or caught		0	1	c11
12.	Suddenly scared for no reason		0	1	c12
13.	Been unable to enjoy your day to day activities		0	1	c13
14.	Not been able to make a decision		0	1	c14
15.	Felt completely satisfied with your work at school		0	1	c15
16.	Felt a tightness or pressure in your head		0	1	c16
17.	Taken longer than usual to complete a job or assignment		0	1	c17

		0	1	
18.	Felt no interest in things	0	1	18
19.	Been edgy, impatient, or bad-tempered over little things	0	1	19
20.	Had difficulty in staying asleep	0	1	20
21.	Had a death wish	0	1	21
22.	Felt that you were not doing things well	0	1	22
23.	Had constant ideas of taking your life	0	1	23
24.	Had hot or cold spells	0	1	24
25.	Felt hopeless about the future	0	1	25
26.	Felt like everything is an effort	0	1	26
27.	Felt worthless	0	1	27

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SECTION 6: LIFESTYLE
Please circle the answer that best describes
how you feel about life.

IN GENERAL

		NO	YES	
1.	I prefer an exciting, unpredictable life.	0	1	
2.	I like to think things over carefully before I act.	0	1	
3.	I enjoy taking risks in life.	0	1	
4.	I do dangerous things sometimes just for the thrill of it.	0	1	
5.	I prefer new and exciting experiences even if they might be dangerous.	0	1	
6.	I prefer to stay home in the evening rather than go out.	0	1	
7.	I would like to have more opportunities at school for extracurricular activities.	0	1	
8.	I would like to have more opportunities for social activities arranged by my school.	0	1	
9.	I would like to have more opportunities for community service projects.	0	1	
10.	I would like to be involved in providing peer counseling.	0	1	
11.	I would like to receive peer counseling.	0	1	

12. What would you like to see improved at your school? (Please respond in the space provided)

13. How would you go about improving it?

14. What do you think is the most effective way for students to avoid trouble (fights) in school?

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15. In general, how would you rate how "stressed out" you feel by school?

| Very stressed | Moderately stressed | Slightly stressed | Very little stress |
| 1 | 2 | 3 | 4 |

16. In general, how would you rate how "stressed out" you feel by your life outside of school?

| Very stressed | Moderately stressed | Slightly stressed | Very little stress |
| 1 | 2 | 3 | 4 |

17. If you were to name the three (3) most important things you want to get out of going to High School, what would they be?

1. _____

2. _____

3. _____

—End of Questionnaire--

Thank you for completing this questionnaire. Good luck on the drawing!! We will be giving away a CD Boom Box and at least 10 other prizes. Remember to complete and tear off the entry form at the beginning of this survey to be entered in the drawing . Place the entry form in the marked carton.

DO NOT WRITE YOUR NAME ON THIS QUESTIONNAIRE

Section	Question #	Question
VARIABLE ONE:PERCEIVED STRESS BY SCHOOL		
S2	2a	How often do you feel stressed out (overwhelmed) by the amount of school work you have
S2	2b	How often do you feel stressed out (overwhelmed) by your other school related activities
S6	15	In general, how would you rate how "stressed" out you feel by school
VARIABLE TWO: PERCEIVED STRESS BY LIFE OUTSIDE OF SCHOOL		
S2	2c	How often do you feel stressed out (overwhelmed) by after school chores at home (housecleaning, watching a brother/sister)
S2	2d	How often do you feel stressed out (overwhelmed) by your job
S2	2e	How often do you feel stressed out (overwhelmed) by major problems in your family (divorce, illness, deaths, unemployment)
S2	6a*	How often do you worry about the money situation in your family
S2	6c*	How often do you worry about your appearance (your attractiveness or looks)
S6	16	In general, How would you rate how "stressed" out you feel by your life outside of school
VARIABLE THREE: SYMPTOMS OF PSYCHOLOGICAL DISTRESS		
S5	1	Felt well and in good health (reverse coding)
S5	2	Headaches
S5	3	Nervousness or shakiness inside
S5	4	Lost much sleep over worry
S5	5	Felt that Life is not worth living
S5	6	Felt ill
S5	7	Felt low in energy or slowed down
S5	8	Thoughts of ending your life
S5	9	Felt useless
S5	10	Been unable to do something because you were so nervous
S5	11	Feelings of being trapped or caught
S5	12	Suddenly scared for no reason
S5	13	Been unable to enjoy your day-to-day activities

Section	Question #	Question
S5	14	Not been able to make a decision
S5	15	Felt completely satisfied with your work at school (reverse coding)
S5	16	Felt tightness or pressure in your head
S5	17	Taken longer than usual to complete a job or assignment
S5	18	Felt no interest in things
S5	19	Been edgy, impatient, or bad-tempered over little things
S5	20	Had difficulty in staying asleep
S5	21	Had a death wish
S5	22	Felt that you were not doing things well
S5	23	Had constant ideas of taking your life
S5	24	Had hot or cold spells
S5	25	Felt hopeless about the future
S5	26	Felt like everything is an effort
S5	27	Felt worthless
VARIABLE FOUR A: PROBLEM FOCUSED COPING		
S4	4	"Take things one step at a time"
S4	5	"Consider several alternatives for handling a problem
S4	6	"Draw on past experiences (what you have done in a similar situation before)"
S4	7	"Try to find out more about the situation
S4	8	Talk with a professional person (teacher, doctor, minister, counselor) about the situation"
S4	9	"Take some positive action"
S4	10	"Talk with your parents or other relative about the problem"
S4	11	"Talk with a friend about the situation"
VARIABLE FOUR B: EMOTION FOCUSED COPING		
S4	1	"Try to see positive side of things"
S4	2	"Try to step back from a situation and be more objective"
S4	3	"Pray for guidance and strength"
S4	12	"Exercise more"
S4	13	"Prepare for the worst"
S4	14	"Take out your frustration on other people because you feel angry or depressed"
S4	15	"Try to reduce the tension by eating more"
S4	16	"Try to reduce the tension by smoking more"
S4	17*	"Try to reduce the tension by drinking alcohol"
S4	18*	"Try to reduce the tension by sleeping more"
S4	19	"Keep feelings to self"
S4	20	"Work on other things to keep your mind off the problem"

Section	Question #	Question
S4	21	"Not worry about it and figure everything will probably work out fine
S4	22*	"Go shopping and buy yourself nice things"
S4	23*	"Spend extra time watching TV or playing video games"
VARIABLE FIVE: PERCEIVED EMOTIONAL SUPPORT		
S2	10a	Do you feel you can talk to (share your emotions with) your teachers
S2	10b	Do you feel you can talk to (share your emotions with) your parents
S2	10c	Do you feel you can talk to (share your emotions with) your friend(s)
S2	10d	Do you feel you can talk to (share your emotions with) your brother(s)/ sister(s)
S2	10e	Do you feel you can talk to (share your emotions with) your relative(s)
S2	10f	Do you feel you can talk to (share your emotions with) someone else
S3	9	I've felt I can go to my teachers with things that are on my mind
S3	14	My teachers really listen to what I have to say
S3	17	My teachers understand me
S3	13	When I talk with my teachers, friends or family, it seems strained or uncomfortable

Appendix B

UNIVERSITY OF
MARYLAND

College Park, Maryland 20742
Reference: IRB/HSR Identification Number [illegible]

November 3, 2000

MEMORANDUM
Notice of Receipt of Final Review by IRB or HSR application

TO: Dr. Sharon Desmond
        Mr. Frances O. Allen
        Department of Public Health & Community Service

FROM: Dr. Phyllis Moser-Veillon, Co-Chairperson
        Dr. Mark Rogers, Co-Chairperson
        Institutional Review Board

PROJECT ENTITLED:
        "Psychological Distress in Adolescents: The Role of Coping Responses
        and Emotional Support"

The Institutional Review Board (IRB) concurs with the departmental Human Subjects Review Committee's (HSRC's) preliminary review of the application concerning the above referenced project. The IRB has approved the application and the research involving human subjects described herein. We ask that any future communications with our office regarding this research reference the IRB/HSR identification number indicated above.

We also ask that you not make any changes in the approved protocol without first notifying and obtaining the approval of the IRB. Also, please report any deviations from the approved protocol to the Chairperson of your departmental HSRC. If you have any questions or concerns, please do not hesitate to contact us at irb@deans.umd.edu. Thank you.

ADDITIONAL INFORMATION REGARDING IRB/HSRC APPROVALS

EXPIRATION OF IRB APPROVAL—approval of non-exempt projects expires one year after the official date of IRB approval; approval of exempt projects expires two years after that date. If you expect to be continuing or analyzing data after the expiration of IRB approval, please contact the HSRC Chairperson in your Department about submitting a renewal application. (PLEASE NOTE: If you are not collecting data from human subjects and any on-going data analysis does not increase the risk to subjects, a renewal application would not be necessary.)

STUDENT RESEARCHERS—Unless otherwise requested, the IRB will send copies of approved paperwork to the supervising faculty researcher (or advisor) of a project. We ask that such persons pass on the paperwork or a copy to any student researchers working on that project. Their paperwork may be needed by students in order to apply for graduation. PLEASE BE ADVISED THAT THE IRB MAY NOT BE ABLE TO PROVIDE COPIES OF THAT PAPERWORK, particularly if several years have passed since the date of the original approval.

Enclosures (where appropriate) will include stamped copies of informed consent forms included in application and any copies of the application provided by the HSRC as part of this memorandum and any consent forms to be used as part of your approval of the Human Subjects Review Committee.

STATEMENT OF APPROVAL

COMMITTEE ON HUMAN SUBJECTS
JOHNS HOPKINS SCHOOL OF HYGIENE AND PUBLIC HEALTH

DATE: April 1, 1996

M E M O R A N D U M

TO: Dean, School of Hygiene and Public Health

FROM: Chairman, Committee on Human Subjects

SUBJECT: Research protocol and title: "Stress Management and Outcome in High School Students for Substance Recovery"

CHSR H.16.55.6 04.1.

Sponsoring Agency: Woodlawn High School

Principal Investigator: Robyn Gershon, (Stress Public)

The Committee on Human Research has reviewed the above application and, on the basis of available evidence, is of the opinion as follows:

(1) That the rights and welfare of subjects are adequately protected.

(2) That the methods of securing informed consent are satisfactory appropriate given the nature of the subjects, the risks of human research, the nature of the study to be conducted.

(3) That the risks and potential benefits, including psychological and physical harm, are balanced, and the study as described is of value and the investigator satisfactorily performed.

(4) That the investigator assumes the responsibility of notifying the Committee on Human Research if any changes are to occur in the methods or in the nature of the research project involving subjects or the individual subjects.

(5) no

[signature]
Diane L. Matuszak, Ph.D.
Chair

copies:
1   Principal Investigator/Program Director
2   Department Chair
3   CHSR
4   file
rev 3/91

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