Traumatic Events, Social Support, and Self-Efficacy: Correlates of Health Perceptions Among Adolescents

by

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DEDICATION

This dissertation is dedicated to my parents, Jane and Thomas Hickey. Without their encouragement and love, my pursuit of doctoral studies would have been impossible.

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ABSTRACT

The relationship between traumatic events and health perceptions among adolescents is poorly understood. While social support and self-efficacy protect adults from the adverse effects of trauma, the nature of this relationship among adolescents is not clear. The Adolescent Trauma Conceptual Model provides a useful framework to examine these complex interrelationships.

The purpose of this research is to examine the relationship between traumatic events such as violent life events, non-violent life events, a natural disaster, and war, and health perceptions in an adolescent population. Additionally, the protective effects of social support and self-efficacy upon these traumatic events and health perceptions is examined.

This descriptive correlational study is a subcomponent of the Carolina Adolescent Health Project (CAHP), a three-year longitudinal project aimed to study the effects of Hurricane Hugo on the health of South Carolina adolescents. Freshmen and sophomores who could read and write English from three high schools and who took the initial CAHP Survey comprised this study's sample ($\underline{N}$=1427). Measures on the CAHP Survey included the Hurricane Exposure

Scale, Violent Life Events Scale, Non-Violent Life Events Scale, Index of Social Support, and Self-Efficacy Scale. Independent variables included traumatic events, demographics, and personal factors, protective variables included social support and self-efficacy, and the dependent variable was the participants' ratings of their health as "poor," "fair," "good," or "excellent." Logistic regression utilizing Categorical Modeling (CATMOD) was performed univariately and with multivariate backwards regression.

Final model results indicate that traumatic events inversely associated with health perceptions included violent life events, non-violent life events, and hurricane exposure. Females and blacks had higher odds of poorer health perceptions. As social support and self-efficacy each decreased, health perceptions decreased.

Findings suggest that traumatic events may be predictive of health perceptions among adolescents. High social support and self-efficacy appear to protect adolescents' health perceptions from the effects of traumatic events. Intervention programs that build on social support and self-efficacy are recommended as most appropriate in enhancing health perceptions among adolescents who have suffered traumatic event stress.

CHAPTER I: BACKGROUND

Introduction

Adolescents comprise the only group in the United States who have not demonstrated an improvement in morbidity and mortality in the past thirty years, despite remarkable technological and pharmacological advancements made in the health-care arena during this interim (Blum, 1987; Blum et al., 1988). While the incidence of infectious diseases in adolescence has declined, the incidence of violence-related, traumatic illnesses has risen sharply. The primary etiologies of illness and death in American youth today are related to motor vehicle accidents, suicides, and homicides (Blum, 1987; Millstein, 1989).

These trauma statistics among American adolescents are not the result of random, "accidental" events. Gender, ethnicity, socioeconomic status, family structure, and residential locale have consistently demonstrated significant associations with violence-related injuries (Delga, Heinssen, Fritsch, & Goodrich, 1989; Fuchs & Recklis, 1992; Harris & Howard, 1987; Paulson, Combs, & Landsverk, 1990; United States Congress, 1986; United States'. D.H.H.S./P.H.S., 1990; Weinrich et al., 1993). While empirical evidence suggests specific risk factors for traumatic illness, theory asserts that the common underlying

factor for the epidemic of violence-related symptoms among adolescents is stress (Blum, 1985; Blum, 1987; Rutter, 1979; Rutter, 1987).

Adolescence is commonly characterized as an inherently stressful stage in the life cycle by virtue of the nature and the magnitude of the developmental tasks that must be resolved (Blos, 1962; Peterson, 1988; Peterson & Hamburg, 1986; Rutter, 1979; Rutter, 1987; Simmons, Rosenberg & Rosenberg, 1973). Adolescents must simultaneously develop identity, forge bonds with peers, and separate from parents. Paradoxically, adolescents must resolve these expected developmental-related stressors with less mature emotional resources than their adult counterparts. Many studies suggest that adolescents lack the experience and the cognitive resources to cope with stress in a healthy manner (Carbaugh, 1991; Hardin, Carbaugh, Weinrich, Pesut, & Carbaugh, 1992; Weekes & Savedra, 1988).

Lazarus postulated (1966) and research has supported that stress has a directly inverse relationship with adult health perceptions (Baumann, 1961; Dent, Tennant, & Goulston, 1987; Haley, Levine, Brown, Berry, & Hughes, 1987; Maddox, 1962; Palmore & Luikart, 1972; Parkerson et al., 1989; Tessler & Mechanic, 1976). While there are a wealth of studies that have examined the relationship between stress and adolescent illness (Cappelli et al., 1989; Compas, Slavin et al., 1986; Greene, Walker, Hickson, & Thompson, 1985; Mechanic, 1983), little research

has examined the relationship between stress and adolescent health perceptions. Though DeMaio-Esteves (1990) found a significant causal path between daily stress and health perceptions among adolescent females (N=159), a current literature review of published research reveals no other studies that specifically question this association.

The paucity of studies on stress and adolescent health perceptions is particularly striking when one considers that research strongly suggests that adolescents have unique views on health. Studies that have addressed adolescent self-health perceptions indicate that, in general, adolescents place a high value on "good health" (Benedict, Lundeen, & Morr, 1986; Radius, Dillman, Becker, Rosenstock, & Horvath, 1980). Indeed, Levenson, Morrow, and Pfefferbaum (1984) discovered, when comparing health attitudes of adolescents to those of physicians, nurses, and teachers, that adolescents placed more importance on and expressed more concern for their health status than the sampled adults anticipated.

Thus, adolescents are concerned about their health-status. Some studies imply that adolescents have more health-related concerns than adults recognize (Benedict, Lundeen, & Morr, 1986; Levenson, Morrow, & Pfefferbaum, 1984; Radius et al., 1980). Moreover, there exists a plethora of studies that indicate that adolescents conceptually define health differently from adults or children (Duchen-Smith, Turner, & Jacobsen, 1987; Hardin,

Misener, Cheever, & Fuller, 1993 Magilvy, McMahon, Bachman, Roark, & Evenson, 1987; McPherson & MacFarlane, 1988). In these studies, adolescents identify health in terms of bodily appearance, physical adequacy, and emotional satisfaction with interpersonal relations. Therefore, Millstein (1989) asserted that adolescents typically view health as a more global, abstract phenomenon than merely the absence of illness.

Significance

Theorists assert that adolescence is innately fraught with turmoil and uncertainty (Blos, 1962; Rutter, 1987). Yet, the epidemic rise of violence among contemporary American youth suggests that today's adolescents are experiencing stress of a magnitude which prior generations have not had to negotiate (Blum, 1987; McAnerney, 1987; Moynihan, 1986). Therefore, the root of this contemporary stress must be different from typical maturational changes inherent to adolescence.

While there are many studies that have examined the relationship between major life event stress, everyday "hassles," and psychophysiological illness in adolescents (Coddington, 1972a; Coddington, 1972b: Compas, 1987; Compas, Davis, & Forsythe, 1985; Greene et al., 1985; Wagner, Compas, & Howell, 1988), research on the relationship between disaster stress and adolescent illness have been few (Bromet & Schulberg, 1986; Hardin et al., 1990). Additionally, there are no studies to date that

examine the relationship between traumatic event stressors and self-perceived health in an adolescent population. Studies indicate that social support and self-efficacy protect adults from adverse sequelae subsequent to a traumatic event (Bolin, 1985; Hardin & Cohen, 1988; Lindy, Green, Grace, & Titchener, 1983; Murphy, 1984; Murphy, 1988). However, the protective effects of social support and self-efficacy have not been clearly demonstrated among adolescents.

Andrews, Tennant, Hewson, and colleagues (1978, p.308) astutely noted that the study of traumatic events and their effects on human health can be considered a "doomsday exercise" as the researcher cannot hope to reverse or remedy the traumatic event. However, these scientists (Andrews et al., 1978) assert that studying factors that ameliorate the negative effects of stress can result in effective planning, analysis, and evaluation of therapeutic programs, improving the health of adolescents post-traumatic event.

Purpose

The purpose of this research was to examine the relationship between traumatic events such as violent life events, non-violent life events, a natural disaster, and war, and health perceptions in an adolescent population. Theory and research suggest that social support and self-efficacy may play a critical role in ameliorating the negative association between these traumatic events and adolescent health perceptions. Therefore, the protective

effects of social support and self-efficacy upon this relationship will be examined.

Conceptual Framework

While many theories conceptualize adolescence as a stressful developmental stage (Blos, 1962; Erikson, 1968; Rutter, 1979), few theories test the complex interrelationships between specific adolescent stressor variables and health. The Adolescent Trauma Conceptual Model was developed in an effort to explain and predict relationships among selected stress variables (Hardin, Weinrich, Weinrich, Garrison, & Hardin; 1990).

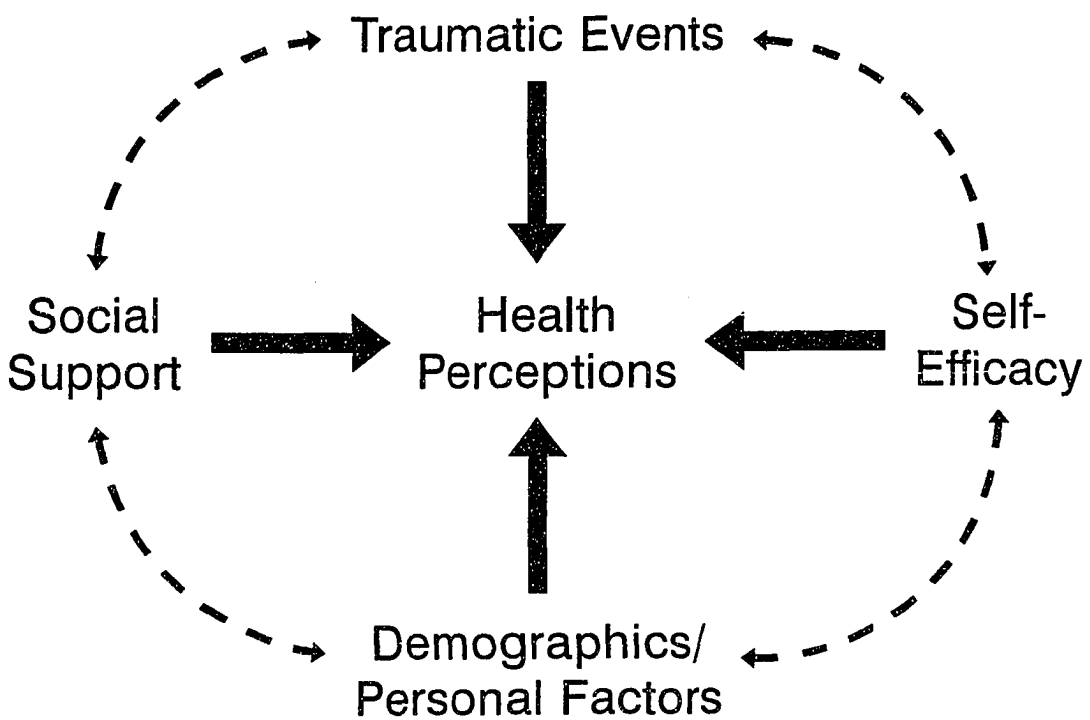
According to this model, adolescents are developmentally engaged in an egocentric-sociocentric dialectic (Hardin, Pesut et al., 1992; Hardin, Weinrich et al., 1992). This "dialectic" is a process that reflects adolescents' attempts to integrate self and societal demands. It signifies teens' quest to forge a distinct identity through separation from parents while simultaneously developing a social identity through developing bonds with peers and others. Self-efficacy is a sub-concept of the egocentric construct, while social support is a sub-concept of the sociocentric construct (Hardin, Pesut et al., 1992).

Adolescents who successfully negotiate these egocentric-sociocentric or self-other demands form a coherent sense of self and stronger social networks. This healthy self-other synthesis is postulated to protect

adolescents from the effects of traumatic events and result in more positive health outcomes. This model is schematically represented in Figure 1.

Figure 1

The Adolescent Trauma Conceptual Model



Definition of Terms

The following terms are defined as referents for the Adolescent Trauma Conceptual Model as operationalized for this study (see Figure 1). These terms will be operationally defined in further detail in Chapter III.

Independent Variables

Traumatic Events

Violent Life Events are injuries or threats of serious injuries to the self caused intentionally by others that occurred within the last year.

Non-Violent Life Events are any major, non-violent traumatic events that participants could have experienced within the past year. They include major emotional threats and physical illnesses to self as well as to family, friends, and significant others.

Hurricane Exposure is a disaster stressor resultant from participants' residential status in a presidentially-declared disaster area during Hurricane Hugo. This stress exposure is determined by participants' self-perceived impact the hurricane had on their lives.

Persian Gulf War Exposure is a traumatic stressor determined by participants' affirmation that they have a significant other sent to the Middle East during the Persian Gulf War.

Demographics and Personal Factors

Economic Status measures one facet of socioeconomic status. It was based on whether participants were eligible

for a partial or full school lunch subsidy.

Family Structure was measured by the parents or guardians with whom participants lived. It does not reflect siblings or extended family networks.

Academic Achievement is a measure that incorporates both student motivation as well as intelligence. It is based on participants' school placement in required English courses. Class placement can be honors, college preparatory, general, or remedial.

Religiosity is a measure that reflects participants' self-description of their general orientation towards religion.

Protective Variables

Social Support is the type and amount of love, nurturance, respect, and support participants perceive they have received and can continue to expect from significant others. **Self-Efficacy** is participants' beliefs about their ability to produce a desired outcome in a given situation.

Dependent Variable

Health Perceptions are defined as global conceptualizations of how participants rate their own health status at a specific point in time.

Hypotheses

The following hypotheses are generated from prior empirical evidence and the operationalized Adolescent Trauma Conceptual Model displayed in Figure 1. Among adolescents:

Hypothesis #1: Traumatic events are inversely associated

with positive health perceptions. Specifically:

(1) Violent life events are inversely associated with positive health perceptions.

(2) Non-violent life events are inversely associated with positive health perceptions.

(3) Hurricane Hugo exposure is inversely associated with positive health perceptions.

(4) Persian Gulf War exposure is inversely associated with positive health perceptions.

Hypothesis #2: Demographics and personal factors affect health perceptions. Specifically:

(1) Economic support is inversely associated with positive health perceptions.

(2) As academic achievement increases, positive health perceptions increase.

(3) Intact family structure is positively associated with positive health perceptions.

(4) As religiosity increases, positive health perceptions increase.

Hypothesis #3: As protective factors increase, positive health perceptions increase. Specifically:

(1) As social support increases, positive health perceptions increase.

(2) As self-efficacy increases, positive health perceptions increase.

CHAPTER II: REVIEW OF THE LITERATURE

Overview: The Adolescent Trauma Conceptual Model

Since Selye (1956) first published his seminal work, The Stress of Life, a number of stress theories have been developed that describe, explain, and predict person-environment adaptational stress responses. However, these general models have been derived and tested with adult populations and their specific applicability to adolescents is limited.

Hardin and colleagues (1990) proposed a conceptual framework that is theoretically useful and empirically testable in stressed adolescent populations. This model was called the Adolescent Disaster Stress Model. This model was initially conceptualized as an explanatory model among selected variables in an adolescent population following a natural disaster (Hardin et al., 1990). This model has been refined and developed further with continued longitudinal studies with large samples of adolescents who have experienced a variety of traumatic events.

This revised adolescent stress model is called the Adolescent Trauma Conceptual Model (Hardin, Pesut, et al., 1992; Hardin, Weinrich et al. 1992). This model is rooted in Stress Theory (Selye, 1956), Transactional Cognitive Theory (Lazarus, 1966; Folkman & Lazarus, 1984),

Developmental Theory (Erikson, 1968; Erikson, 1982) and Adolescent Psychoanalytic Theories (Blos, 1962; Blum, 1985; Rutter, 1979). Thus, the model incorporates key developmental idiosyncrasies of adolescence into a traumatic stress model.

This literature review addresses each of the main concepts embedded within the Adolescent Trauma Conceptual Model. Adolescence is theoretically presented as a unique stage in the human lifecycle. Adolescents have unique perceptions about health. Health status is greatly influenced by stress. Stress is theoretically defined, and a typology of stress is presented. Stressors are identified as either major, traumatic events, or everyday "hassles." Adolescents' typical methods of negotiating stress are discussed. Traumatic event studies among adolescents are few. Therefore, results are extrapolated from adult traumatic stress studies and theories of adolescence in order to generate appropriate, testable hypotheses about adolescents and traumatic event stress. Protective factors that research indicates mitigate traumatic stress responses are addressed. These key protective factors include social support and self-efficacy.

Adolescence

Adolescence is a developmental period during the life cycle that straddles childhood and adulthood. It is characterized by biological and psychological changes. Biological changes are characterized by hormonally-induced

pubertal growth changes. Psychological changes are largely epigenetically maturational, as adolescents attempt to identify who they are (Erikson, 1968; Erikson, 1982). The ability to ponder one's existence and place in the world is made possible through adolescents' new-found ability to think abstractly and view themselves objectively. This new ability is consistent with formal-operational thought (Piaget & Inhelder, 1958).

By virtue of the nature and magnitude of these life cycle changes, many scientists view adolescence as an inherently tumultuous phase of development (Blos, 1962; Peterson, 1988; Peterson & Hamburg, 1986; Rutter, 1979; Rutter, 1987; Simmons, Rosenberg & Rosenberg, 1973). Blum (1985) portrayed the integral clash of adolescence as an egocentric-sociocentric dialectic in which adolescents attempt to simultaneously integrate self and societal expectations.

Offer and colleagues, on the other hand, asserted the opposing opinion that normal adolescents are not enmeshed in turmoil and are able to negotiate daily stressors with ease (Offer, Ostrov, & Howard, 1981; Offer, Ostrov, & Howard, 1984). Offer and colleagues (1981; 1984) based these assertions on long-term empirical studies with thousands of adolescents, conducted both in America and abroad. While the sheer magnitude of Offer's research cannot be dismissed as irrelevant, the bulk of this research was conducted over fifteen years ago. In the interim, there has been an

epidemic rise in stress-related violence among adolescents (Delga et al., 1989; Fuchs & Recklis, 1992; Harris & Howard, 1987; Paulson, Combs, & Landsverk, 1990; United States Congress, 1986; United States'. D.H.H.S./P.H.S., 1990; Weinrich et al., 1993). Therefore, while adolescence may be viewed in a theoretical sense as not inherently stressful, contemporary empirical evidence strongly suggests otherwise.

Stress

Selye (1956) set the initial groundwork for explaining the complex interrelationship between stress and health. Selye asserted that stress plays the primary role in enhancing, maintaining, and/or eroding an individual's health status. A key assumption made explicit in Selye's "Stress Theory" is that stress is neither inherently good or bad. Ultimately, it is "how we take it" (i.e. - "it" meaning stress) that determines the trajectory of health. Thus, Selye asserted that perceptions play a key role in negotiating healthy adaptation to stressful events.

Lazarus (1966) expanded upon the role of perceptions in negotiating stress. Lazarus' Transactional Cognitive Theory posits a complex, dynamic, reciprocal person-environment interrelationship (Folkman & Lazarus, 1984; Folkman & Lazarus, 1985; Lazarus & Cohen, 1977). Stress is conceptually defined as a perceived threat to the well-being of an otherwise stable, healthy person-environment milieu. A key postulate of this theory is that health perceptions

are directly related not only to a person's perceptions of the magnitude of stress, but also to a person's ability to negotiate stress. Numerous classic research studies have supported this assertion (Baumann, 1961; Palmore & Luikart, 1972; Tessler & Mechanic, 1976).

Lazarus asserted that coping is a mediating process by which individuals negotiate stress (Folkman & Lazarus, 1984; Folkman & Lazarus, 1985; Lazarus, 1966; Lazarus & DeLongis, 1983). Though hypothetically there could exist an infinite number of human coping responses, Lazarus asserted that all coping strategies may be classified as either problem-solving or emotion-focused. Problem-solving coping strategies utilize cognitive abilities to solve a dilemma. Emotion-focused coping strategies are targeted at regulating stress-induced unwanted emotions. Most scientists agree that adolescents are particularly vulnerable to adverse effects of stress because they have an immature and largely ineffective repertoire of coping strategies; thus, their ability to regulate their emotions and problem-solve dilemmas are not sophisticated (Carbaugh, 1992; Compas, Banez, Malcarne, & Worsham 1989; Compas, Malcarne, & Fondacaro, 1988; Hardin, Carbaugh, Weinrich, et al., 1992).

Types of Stress

Pearlin, Lieberman, Menaghan, & Mullan (1981) asserted that there are two major sources of stress; major or traumatic events and chronic strains or "hassles." Types of stress are presented in Table 1.

Table 1

Types of Stress

Type of Stress	Effects	Examples
Traumatic Events	Distal	
Major Life Events		Experiencing Death of a Parent
		Failing a Grade
		Being Robbed
		Being Raped
Disasters		Hurricane
		Toxic Chemical Spill
		Tornado
War		Parent Sent to Fight War
		Living in a War Zone
Everyday or "Hassles"	Proximal	Waiting in Line
		Misplacing Car Keys
		Loud Music Interfering with Concentration

DeLongis and colleagues argued that traumatic events are "distal" stressors because they occur at a discrete point in time and their effects can be studied prospectively. Conversely, "hassles," are "proximal" stressors because they directly reflect a person's immediate

perception of an everyday event (DeLongis, Coyne, Dakof, Folkman, & Lazarus, 1982).

Many studies imply that "hassles," or everyday stressors are better predictors of health status than are traumatic events (DeLongis et al., 1982; Kanner, Coyne, Schaefer, & Lazarus, 1981; Wagner et al., 1988). In these studies, as the number and perceived intensity of "hassles" increase, health status decreases. This inverse relationship between traumatic events and health status has not been well established. Alternately, however, some scientists propose that traumatic events may either directly give rise to new everyday annoyances (Kanner et al., 1981) or may indirectly change the meaning of everyday occurrences so that they are perceived as frustrating (Pearlin et al., 1981). From this view, discrete, traumatic events as antecedents to health outcomes retains its theoretical and pragmatic saliency.

Traumatic events may be either individually or collectively experienced. Disaster stress is characterized by exposure of entire populations to a multitude of life-threatening stressors and massive personal and environmental destruction (Hardin, 1993; Murphy, 1984). Conversely, life event stresses are major events suffered by an individual or family unit; thus, life event stresses are relatively limited in scope.

Life Event Stress

Life event stressors are characterized as causing the

affected persons to significantly change their typical patterns of behavior or lifestyle (Coddington, 1972b; Dohrewend & Dohrewend, 1974; Thoits, 1982). They typically involve major threats to the well-being or normal functioning of the individual or the individual's family members or close friends (Thoits,1982). These threats may include such events such as parental divorce, death of a sibling, or the new diagnosis of a chronic, debilitating disease.

Empirical evidence among adults suggests that life event stress can precipitate somatic illness (Hyman & Woong, 1982; Rabkin & Streuning, 1976; Stone, Reed, & Neale, 1987). These stresses may also have an additive relationship with illness outcomes; or, the more life event stress an individual sustains over a given period of time, the sicker that individual may become (Hyman & Woong, 1982).

Findings from analogous studies among adolescents are not as resolute. While cross-sectional adolescent studies find an association between life events and somatic and psychological illness (Compas, Howell, Phares, Williams, & Giunta, 1986; Gad & Johnson, 1980; Greene et al., 1985; Johnson & McCutcheon, 1980), the few prospective studies conducted to date have not found a clear causal association (Compas, Wagner, Slavin, & Vannatta, 1986; Wagner et al., 1988). Indeed, Compas (1987) asserted that among adolescents, somatic and psychological symptoms may be a better predictor of negative life events than vice versa.

Disaster Stress

Disaster stress is distinct from life event stress by virtue of its complex, collective nature. Disaster stress can be related to threats to survival, mourning, property damage, and substantial life changes that affect large segments of the population (Bolin, 1982; Bolin, 1985; Hardin & Cohen, 1988; Lindy, Grace, & Green, 1981; Lindy et al., 1983). Individual responses to disaster are dependent on a multitude of interactive factors that include the individual's ability to negotiate the stress as well as the duration and intensity of the disaster itself (Hardin, 1993). Additionally, typology of disaster may have a differential impact. For instance, persons exposed to a technological disaster such as the Three Mile Island nuclear disaster experience traumatic stress resultant from human error whereas persons exposed to battle uniquely experience the intent of others to do harm (Logue, Melick, & Hansen, 1981).

Among adults, post-disaster research suggests that almost one third of persons exposed to a natural disaster such as a flood or a hurricane can suffer serious emotional sequelae (Gleser, Green, & Winget, 1981). Anger and depression may linger for as long as three years post-event (Hardin & Cohen, 1988; Murphy, 1984; Murphy, 1988). Significant increases in the incidence of somatic illnesses and injuries have also been reported (Bennet, 1970; Logue, 1978; Murphy, 1984).

Because of their immature and ineffective coping skills, theory predicts that adolescents would suffer more stress than their adult counterparts post-disaster. Indeed, Solomon (1989) asserted that adults' previous life experiences serve to inoculate them against disaster's most stressful effects. Because adolescents have less life experiences to draw from, one would expect adolescents to have poorer health outcomes than adults post-disaster.

Results from the few adolescent post-disaster studies have been conflicting. While Bromet and Shulberg (1986) reported that parents of adolescents who were exposed to the Three-Mile Island technological disaster found no effects on their mental health three years post-event, Terr (1983) asserted that parents under-report traumatic symptoms in their children. Thus, reports from the adolescents themselves may have yielded different results.

Hardin and colleagues (1993) demonstrated that adolescents post-Hurricane Hugo (N=1482) reported increased symptoms of psychological distress such as anger, depression, anxiety, and global mental distress, with increased hurricane exposure. Females and Caucasian students were noted to have higher levels of distress than males and African-American students. In a related study, Garrison and colleagues (1993) reported that adolescents post-Hurricane Hugo (N=1264) persistently reported distressing symptoms such as reexperiencing the storm (20%), having symptoms of increased periods of arousability (18%),

and feeling a numbed general responsiveness and avoidance of stimuli associated with the hurricane (9%). These symptoms are all consistent with Post-Traumatic Stress Disorder (PTSD) (Garrison, Weinrich, Hardin, Weinrich, & Wang, 1993). Kinzie (1986) reported an even higher prevalence of PTSD among adolescent Cambodian refugees (50%).

War Stress

Psychological trauma subsequent to war exposure is not as clearly understood as physical trauma. While current studies commonly focus on Post-Traumatic Stress Disorders suffered by soldiers who actively engaged in combat, UNICEF estimates that 80% of the direct and indirect casualties of war include children and civilian women (Lee, 1991).

Baker (1990) assessed the psychological health of 796 Palestinian children who lived in the occupied West Bank and Gaza Strip and found that children exposed to wartime violence had associated higher prevalence of conduct problems and fears. Ironically, however, Baker (1990) also found that those children who actively engaged in war-related violence had less adverse psychological sequelae.

While American children have not been directly exposed to war-time violence as have their Palestinian counterparts, research suggests that children of American military parents face unique traumatic stressors. These can include frequent moves, prolonged absences by the military parent, and the threat of loss of the military parent because of war (Blount, Curry, & Lubin, 1992; Ursano, Holloway, Jones,

Rodriguez, & Belenky, 1989). While Jensen, Xenakis, Wolf, and Bain (1991) found that children of military parents did not suffer significantly high levels of psychopathology (n = 213), Rosen and Mogham (1991) found that self-reported well-being among military family members was associated with being able to predict military-related family separation or deployment schedules.

Slagle and colleagues interviewed 37 persons directly and indirectly involved in a non-fatal military air accident (Slagle, Reichman, Rodenhauser, Knoedler, & Davis, 1990). They found that spouses of military members in the aircraft suffered more distressing psychological symptoms for a longer period of time after the near-fatal accident than the actual aircraft victims. Therefore, families of military members involved in hazardous operations, such as a war, could suffer worse psychological trauma than the military members. Additionally, war-time military deployment schedules are necessarily unpredictable which probably compounds familial stress. There are no studies to date that examine parental war-time deployment's impact on children.

Factors that Protect Against the Effects of Traumatic Stress

Theory asserts (Folkman and Lazarus, 1984) and research confirms (Bolin, 1982, 1985; Hardin & Cohen, 1988; Lindy, Grace, & Green, 1981; Lindy et al., 1983; Murphy, 1984; Murphy, 1987; Murphy, 1988; Murphy, 1989) that social

support and self-efficacy ameliorate the negative effects of traumatic stress resulting in enhanced health outcomes.

Social Support

Social support is a multidimensional concept that refers to the emotional comfort, tangible assistance, and information or advice persons perceive they can receive in interactions with significant persons or groups (Flannery, 1990; Norbeck, Lindsey, & Carrieri, 1981; Schaeffer, Coyne, & Lazarus, 1982; Wallston, Alagna, DeVellis, & DeVellis, 1983). Folkman and Lazarus (1985) posited that social support is intricately related to effective coping as a buffer between stress and health. These scientists argue that social support is a dynamic, complex process that fluctuates over time and changes somewhat with each new situation (Folkman & Lazarus, 1985).

Folkman and Lazarus (1985) acknowledged that a distinct predictive association exists between antecedent measures of social support and subsequent health outcomes. In particular, numerous studies suggested that social support diminishes the negative effects of stress on health (Bolin, 1982; Bolin, 1985; Hardin & Cohen, 1988; Murphy, 1987; Murphy, 1988).

By virtue of their new ability to think in abstract terms, adolescents begin to be less self-centered and better able to focus on relations with others (Berndt & Ladd, 1989; Piaget & Inhelder, 1958). Thus, they begin to form more intimate, mutually supportive, social networks.

Additionally, as they begin to formulate an identity distinct from their parents (Erikson, 1968), adolescents tend to form these new intimate bonds with peers (Peterson & Hamburg, 1986). Empirical studies with adolescents have confirmed an inverse relationship between social support and symptoms of distress (Compas, Howell et al., 1989: Compas, Slavin et al., 1986; Yarcheski & Mahon, 1986).

Self-Efficacy

Bandura (1977) conceptually formulated self-efficacy within the context of Social Learning Theory. The central tenet of this theory is that behavior, cognition, physiology, and environment mutually and continually interact so that they reciprocally determine each other (Bandura, 1977; Bandura, 1986). Health is determined by the mutual interaction of an individual's environment, physiology, behavior, and thought processes; and, stress is seen as disrupting health (O'Leary, 1985).

Self-efficacy is a key concept within this theoretical frame, as it means that persons' perceptions of their capabilities affect their behavior, motivation, thoughts, and emotions during stressful situations (Bandura, 1986). More precisely, self-efficacy is the belief in one's capabilities to produce a given outcome (Coppel, 1980; Grubbs et al., 1992). Because efficacious persons are thought to cope better during stressful situations, self-efficacy is postulated to play a major role in mitigating the negative effects of stress on health (O'Leary, 1985).

Peterson (1988) asserted that adolescents become more efficacious as they mature. While there is some evidence that self-efficacy is associated with better emotional health among adolescents (Weekes, & Savedra, 1988), prospective, causal studies that address this relationship are lacking.

Social Support and Self-Efficacy

Few studies have specifically addressed the effects of both social support and self-efficacy in mitigating the effects of traumatic stress on health. Murphy (1987) found that self-efficacy was a stronger variable than social support in buffering the adverse effects of disaster stress in an adult population. By contrast, Hardin and colleagues (1993) reported that among disaster-stressed adolescents, social support was a more powerful buffer than self-efficacy, especially in white adolescents. Clearly, more research needs to be done to better articulate the association between these protective variables and stress and health among adolescents.

Summary

There is a marked paucity of research studies that question adolescents' response to traumatic event stressors such as violent life events, non-violent life events, natural disasters, and war. Furthermore, there are no published research studies that examine the association between these traumatic stresses and adolescent health perceptions. Research studies strongly suggest that social

support and self-efficacy protect adults from the adverse effects of traumatic event stressors. Theory posits that social support and self-efficacy also protect adolescents from the adverse effects of traumatic events. Therefore, there is a need to examine the relationship between traumatic event stressors, social support, and self-efficacy, and health perceptions among adolescents.

CHAPTER III: METHODOLOGY

Design

The aim of this research is to examine the relationship between traumatic events, social support, and self-efficacy with health perceptions among adolescents. This study is a subcomponent of the Carolina Adolescent Health Project (CAHP), a quasi-experimental, three-year longitudinal research project whose global three-fold aims included: (1) identifying symptoms of physical and psychological distress in adolescents subsequent to Hurricane Hugo exposure; (2) determining the protective effects of cognitive coping, self-efficacy, and social support; and, (3) determining the effectiveness of a CAHP-designed intervention to improve distress symptoms in adolescents.

Data for this particular descriptive correlational study were collected from the baseline 174-item survey administered to all CAHP participants. This design was mandated since there are no prior documented studies that discuss the association between the complex interrelationships of traumatic events such as violent life event stressors, non-violent life event stressors, disaster stressors, the protective effects of social support and self-efficacy, and health perceptions in an adolescent population. A major potential strength of this study is

that it is a component of a longitudinal project. Thus, significant associations between key independent variables, protective variables, and the outcome variable of interest can be identified and further studied prospectively at a later date.

Setting

Three South Carolina high schools situated in presidentially-declared disaster areas after Hurricane Hugo were the study sites. Though these high schools belong to three different school districts, they lie within a one-hundred mile radius of each other. School A is small, predominantly black (96%), and is located on the rural Carolina coast. School B is larger, 53% black, and located in a suburban area 73 miles inland. School B is located close to a major military installation; thus, 26% of its student population are military dependents. School C is medium-sized, 47% black, and is located in a more urbanized area inland.

Sample (N=1427)

The sample for this study consisted of all freshman and sophomore students in Fall, 1990 from the three participating high schools who could read and write English (98%). These targeted students and their parents were mailed invitations to participate in the project. These invitations were signed by their respective high school principals and written on official county school district letterhead (see Appendix A). Of these eligible students,

approximately 89% agreed and had parental consent to participate.

The students who agreed to participate in the CAHP longitudinal research project (N=1684) reflected diversity in terms of race (54% black), gender (50% female), socioeconomic status (30% received a lunch subsidy), and age (range 13 to 18 years). Only those participants who correctly and completely answered the items of interest on the initial, baseline survey were included for analysis in this study.

Procedure

Research assistants were graduate-level nursing students who attended a two-hour information session that outlined the exact procedures for administering the survey. Written guidelines for survey administration were enclosed with all research assistants' survey packets in order to reinforce guidelines to administer the survey (see Appendix B).

These research assistants administered the surveys during English classes, a required core course for all high school students. Participants were given the entire class period to complete the 174-item CAHP Survey. The research assistants stayed in the room during the entire testing period with each class to clarify any misconceptions and to ensure validity of responses.

Students who initially agreed to participate but who refused to take the survey at the actual time of

administration were not coerced. Research assistants were instructed to say to these students that: "You don't have to but we really wish you would because you can help us understand teens a lot better." (see Appendix B). After completing the survey, participants were paid five dollars.

The classes' English teachers were given enough survey booklets and answer sheets to administer to identified absent participants on a date when the participants returned to class. These teachers were asked to seal the booklets and answer sheets in a CAHP manila envelope and place it in a CAHP-reserved mailbox in the teachers' mailroom.

Measures

The hypothesized relationships among the following variables (see Table 1) were tested. The empirical referents for each of these variables are then discussed.

Table 2

All Variables Analyzed: Traumatic Events, Social Support, Self-Efficacy, and Health Perceptions of Adolescents

INDEPENDENT VARIABLES	PROTECTIVE VARIABLES	DEPENDENT VARIABLE
Traumatic Events:	Social Support	Health Perceptions
Life Events:	Self-Efficacy	VARIABLE
Violent		
Non-violent		
Hurricane Exposure		
War Exposure		
Demographics:		
Gender		
Race		
Economic Support		
Family Structure		
Personal Factors:		
Academic Achievement		
Religiosity		

Summary of Measures

The following table (Table 3) demonstrates the abbreviations, number of items, and internal consistency for all key instruments utilized in the survey. All of these

instruments are in the appendices.

Table 3

Overview of Instruments: Reliability Estimates (N=1427)

Name	Abbreviation	# Items	Alpha
Traumatic Events			
Life Events:			
Violent	VLE	5	NA
Non-Violent	NVLE	20	NA
Hurricane Exposure	EHS	5	NA
Protective Factors			
Index of Social Support	CISS	10	.90
Self-Efficacy Scale	SES	13	.90

Cronbach's coefficient alphas were not computed for the Violent Life Events Scale (VLE), the Non-Violent Life Events Scale (NVLE), and the Hurricane Exposure Scale (EHS). Coefficient alpha is a measure of inter-item consistency that is based on the assumption that all items on a given Likert-type scale measure attitudes directed towards a single construct of interest. Coefficient alpha weights the number of items in a particular scale against the mean

intercorrelation of all the scale items. Therefore, the more consistently the items intercorrelate with each other, the more closely coefficient alpha approximates a value of one (Carmines & Zeller, 1979; Crocker & Algina, 1986; Nunnally, 1978).

The VLE, the NVLE, and the EHS are not attitude scales that measure a single construct of interest. Rather, they measure the occurrence of various traumatic events that may or may not have a significant association with each other. Items on each of these scales are not theoretically necessarily internally consistent with each other. Therefore, computing coefficient alpha on these scales was deferred.

Independent Variables

Traumatic Events

Each of the following highlighted variables were operational referents for Traumatic Events, which are conceptually defined in the Adolescent Trauma Conceptual Model (see Figure 1: Adolescent Trauma Conceptual Model).

Life Events were measured with a CAHP-modified version of Johnson and McCutcheon's Life Events Checklist (Johnson & McCutcheon, 1980). This modified instrument consisted of 25 items with responses graded on a four-point Likert scale format. Possible responses included: (1)= Did not happen; (2) Happened and was good; (3) Happened and was bad; and, (4) Happened and was neither good nor bad. Items consisted only of negative, major life events that may have occurred

within the past year. Specific items germane to concerns of adolescents were also included in this instrument, such as "Repeating a school grade" or "Changing to a new school." (see Appendix C).

Violent Life Events were measured by five items on the **Life Events** checklist that ask participants if they had experienced any or all of these events in the past year: (1) injury to self caused by parent or guardian; (2) being raped; (3) being held up with a gun or a knife; (4) being beaten or attacked; and, (5) being touched in private areas in a way that made the participant uncomfortable. Responses to these items were dichotomized as either having or not having occurred within the past year. Prior empirical evidence with this population suggests significant differences among adolescents who either did or did not suffer at least one violent life event within the past year (Weinrich et al., 1993). Therefore, for the purposes of statistical analysis, the data were coded so that 0 = have had at least one violent life event in the past year and 1 = did not have any violent life events in the past year.

The remaining twenty items on the **Life Events** checklist comprised the scale for the **Non-Violent Life Event** measures. Responses to all of these items were also dichotomized as either having or not having occurred. Prior empirical evidence with this population suggests significant differences among adolescents who did not suffer a non-violent life event within the past year from adolescents who

suffered one non-violent life event within the past year from adolescents who suffered more than one non-violent life event within the past year. The data were coded for the purposes of statistical analysis so that 0 = no non-violent life event, 1 = one violent life event, and 2 = more than one life event suffered within the past year.

Hurricane Hugo Exposure was a CAHP-specific scale developed to measure the impact of Hurricane Hugo on affected adolescents. Five items on the survey comprised this measure (see Appendix D). Exposure to the hurricane was computed as possibly ranging from "0" (least exposed) to "20" (most exposed).

Of the five items that comprised this scale, four items had five response choices which ranged from "1" (minimal exposure) to "5" (maximal exposure). These four items were coded for the purposes of statistical analysis so that a response choice of "1" was coded as 0, "2" was coded as 1, "3" was coded as 2, "4" was coded as 3, and "5" was coded as 4.

The last item on this scale asked participants if "someone important to you (was) badly injured or killed." Though the response choice was dichotomous, a positive response to this item was weighted to equal maximal exposure and coded as equal to 4, while a negative response was coded as equal to 0.

Persian Gulf War Exposure was determined by a specific item in the survey that queried participants if they had a

"Close relative being sent to the Middle East." Item responses were dichotomized as either having or not having occurred. The data were coded for the purposes of statistical analysis so that 0 = no relative was sent to the Middle East and 1 = a relative was sent to the Middle East.

Demographics and Personal Factors

Each of the following highlighted variables are operational referents for demographics and personal factors, and are conceptually defined in the Adolescent Trauma Conceptual Model (see Figure 1: Adolescent Trauma Conceptual Model).

Categorical demographic measures included participants' chronological **age** and their **gender**. The data for gender were coded for the purposes of statistical analysis so that 0 = male and 1 = female.

Race was dichotomized to include either (1) white or (2) black. Nine non-white and non-black participants were deleted from this analysis. This decision was made to ensure that adequately powerful statistical procedures could be performed. The data were coded for the purposes of statistical analysis such that 0 = white and 1 = black.

Economic Support measures were derived from school records. Students were dichotomized as either receiving partial/full lunch subsidy or not receiving a lunch subsidy. The data were coded for the purposes of statistical analysis so that 0 = no lunch subsidy and 1 = some lunch subsidy.

Academic Achievement was measured by the participants'

English class level. Students were dichotomized as either being in (1) an honors or college preparatory English class, or high academic achievers, or (2) a general or remedial English class, or low academic achievers. The data were coded for the purposes of statistical analysis so that 0 = high academic achievement, and 1 = low academic achievement.

Family Structure was measured from one item on the survey that stated "I currently live with..." Participants then chose from five responses on a Likert-scale format. For the purposes of this analysis, however, responses were dichotomized as either (1) living with both biological parents, or intact family structure, or (2) any other family arrangement, or non-intact family structure. This decision was based on prior research evidence that suggests that adolescents who live with a single parent or one biological parent and a step-parent suffer more adverse consequences related to stress than their counterparts who have an "intact" family unit (Moynihan, 1986; McAnerney, 1987; Saucier & Ambert, 1983). The data were coded for the purposes of statistical analysis so that 0 = intact family structure and 1 = non-intact family structure.

Religiosity was measured by one item on the survey that stated that "I would describe myself as..." with responses including (1) very religious, (2) religious, and (3) not religious. The first two response categories were merged so that the response was dichotomized as either religious or not religious. The data were coded for the purposes of

statistical analysis so that 0 = not religious and 1 = religious.

Protective Variables

Social Support was measured with a CAHP-modified version of Coppel's Index of Social Support (CISS) (Coppel, 1980). This instrument utilized a five-point Likert scale format and asked respondents to subjectively appraise the support they had and could expect to receive from family, friends, and significant others during both stressful and everyday situations. Anchors ranged from "1" to "5", with "1" denoting the most negative and "5" denoting the most positive feelings of social support.

Data were coded for the purposes of statistical analysis so that an item response of "1" was equal to 0, an item response of "2" was equal to 1, an item response of "3" was equal to 2, an item response of "4" was equal to 3, and an item response of "5" was equal to 4. This continuous scale's score range was 0 (minimal social support) to 40 (maximal social support). Ten items comprised this scale which Coppel demonstrated had excellent internal consistency with a Chronbach's alpha of .89. Coefficient alpha computed from this study's sample population (N=1427) was similarly excellent and was approximately .90 (see Appendix E for specific items).

Self-Efficacy was measured with a CAHP-modified version of Coppel's Self-Efficacy Scale (Coppel, 1980). This instrument consisted of thirteen items that measured

participants' beliefs in their abilities to achieve personal goals. These items were graded on a five-point Likert scale. Anchors ranged from "1" to "5", with "1" denoting the most negative and "5" denoting the most positive efficacious responses.

Data were coded for the purposes of statistical analysis so that an item response of "1" was equal to 0, an item response of "2" was equal to 1, an item response of "3" was equal to 2, an item response of "4" was equal to 3, and an item response of "5" was equal to 4. This continuous scale's score range was 0 (minimal social support) to 52 (maximal social support). Coppel demonstrated that these items were internally consistent with a Chronbach's alpha of .91. Coefficient alpha computed from this study's population (N=1427) was similarly excellent and was approximately .90 (see Appendix F for specific items).

Dependent Variable

Health Perceptions were measured with a single question on the survey that specifically asked participants: "As of right now, how do you rate your health?" Possible responses were on a four-point Likert scale format and include (1) "poor;" (2) "fair;" (3) "good;" and, (4) "excellent." Data were coded for the purposes of statistical analysis so that "poor" = 0, "fair" = 1, "good" = 2, and "excellent" = 3. "Excellent" responses were used as the referent group during the course of the statistical analyses (see "Data Analysis").

Protection of Human Subjects

This research complied with the guidelines promulgated by the Institutional Review Boards of the University of South Carolina and the individual school boards. Sampled participants and their parents were required to sign an "Active Permission to Participate Form" prior to inclusion in the research project (see Appendix A). Additionally, participants were required to sign a separate "Informed Consent Form" placed on the cover of the survey booklet prior to completion of the survey (see Appendix G). These voluntary participants understood that they could withdraw at any time during the course of the study. Participants were additionally assured of the strictly confidential nature of their data.

Limitations and Strengths

Significant associations that may be found between any of the independent and protective variables and self-rated health cannot be interpreted as causal. However, as this study is conducted under the auspices of CAHP, which is a longitudinal study, significant associations found among these baseline measures of adolescent health can be tracked prospectively to eventually determine possible causality of self-rated health among adolescents.

Generalizability of these results to other adolescent populations could be suspect as this sample was drawn from three high schools in one southeastern state in the United States. However, this sample reflects diversity in terms of

race, socioeconomic status, family structure, and religiosity, and therefore can be considered representative of the more general American adolescent population. Additionally, the sheer number of participants (N=1412) should ensure statistical power (Cohen, 1987).

An assumption must be made that the adolescent participants answered survey items honestly. This assumption could be argued as naive. Methods to ensure the utmost cooperation of participants included: (1) establishing informed consent of all participants with assurances that they could withdraw from the study at any time; (2) reiterating to participants the strictly confidential nature of their responses; (3) administering the surveys by well-trained research assistants; and, (4) remunerating participants at the completion of the survey. Additionally, all surveys filled out incorrectly or incompletely were deleted from analysis.

Data Analysis

A computerized list of study participants was prepared from school records before the survey was administered. A database was constructed using Alpha IV, in order to efficiently code the data. After the surveys were completed, nurse research assistants checked the survey answer sheets for legibility and appropriate completion. The survey answer sheets then received a pre-machine edit. Data were then entered onto microcomputers using the SPSS Data Entry program (Statistical Package for the Social

Sciences, Chicago, Illinois). Pertinent study data were then uploaded to the mainframe computer at the University of South Carolina. Participants who had missing or miscoded pertinent data were deleted from this analysis.

All methods of statistical data analyses were conducted on an IBM mainframe computer using SAS (Statistical Analysis System). Significant descriptive analyses, such as means, standard deviations, or frequency distributions were performed on all pertinent variables.

The psychometric properties of each of the instruments were specifically assessed in this tested population. Chronbach's coefficient alpha was calculated as a measure of internal consistency.

Logistic regression analyses were performed. The categorical modeling (CATMOD) procedure was performed to determine if there were any significant associations between any independent and protective variables and the original four possible polychotomous outcomes of "poor," "fair," "good," and "excellent" health perceptions. The advantage of using CATMOD rather than other logistic regression programs is that the integrity of each of the four original outcome variables can be maintained.

Each of the independent variables, namely, gender, race, economic support, academic achievement, family structure, religiosity, violent life events, non-violent life events, hurricane exposure, and war exposure, and each of the protective variables, namely, social support and

self-efficacy, were run univariately using CATMOD with health perceptions as the dependent variable. All independent and protective variables were run multivariately using backwards stepwise regression.

CHAPTER IV: RESULTS

Description of Sample

The total sample consisted of 1427 freshmen and sophomores. Key demographic characteristics of this sample (N=1427) are noted in Table 4. Overall, these participants were age-appropriate for freshman and sophomore high school students with a mean age of 14.76 years. While the range of ages was large (13-17 years) the overall variance was low (standard deviation of 0.80 years). There was approximately an equal mix of female (49%) and male (51%) participants, as well as whites (47%) and blacks (53%). The majority, 71%, did not receive a subsidized lunch. Roughly half of the participants lived with both biological parents (49%), an "intact family."

Table 4 shows that a little over half of the participants were high academic achievers (55%) which was operationally defined as a student being enrolled in either honors or college preparatory English classes. Approximately 72% of participants described themselves as religious.

Table 4

Demographics and Personal Characteristics of Sample (N=1427)

Variable	Operational Referent	Frequency (Percentage)
Demographics		
Gender:	Female	694 (49%)
	Male	733 (51%)
Race:	White	665 (47%)
	Black	762 (53%)
Economic Support:	No Lunch Subsidy	1007 (71%)
	Lunch Subsidy	420 (29%)
Family Structure:	Intact Family	706 (49%)
	Non-Intact Family	721 (51%)
Personal Factors		
Academic Achievement:	High Achievers	787 (55%)
	Low Achievers	640 (45%)
Religiosity:	Religious	1031 (72%)
	Not Religious	396 (28%)

Age of Sample: Range = 13-17 Mean = 14.76 S.D. = 0.80

Data Analysis

The following hypotheses were tested for this study. Among adolescents:

Hypothesis #1: Traumatic events are inversely associated with positive health perceptions;

Hypothesis #2: Demographics and personal factors affect health perceptions;

Hypothesis #3: As protective factors increase, positive health perceptions increase.

Data Analysis Results for Hypothesis #1

The first hypothesis, that among adolescents **traumatic events are inversely associated with positive health perceptions**, was supported. The sub-hypotheses for Hypothesis #1 were that:

(1) Violent life events are inversely associated with positive health perceptions.

(2) Non-violent life events are inversely associated with positive health perceptions.

(3) Hurricane Hugo exposure is inversely associated with positive health perceptions.

(4) Persian Gulf War exposure is inversely associated with positive health perceptions.

Violent life events and Persian Gulf War exposure were treated as dichotomous variables. Non-violent life events were treated as categorical variables. Frequency distributions of each of these dichotomous and categorical variables were analyzed in terms of the dependent variable,

which was health perceptions. Hurricane Hugo exposure was treated as a continuous variable. Means and standard deviations of this variable were analyzed in terms of health perceptions. The results of these descriptive statistics are outlined in Tables 5 through 8.

Findings from Table 5 reveal that there were no notable trends in terms of health perceptions when analyzed specifically by gender and race sub-groups and the occurrence of violent life events. Nine percent of participants in the total sample reported being the victim of at least one violent life event in the past year. Black females (12%) reported the highest incidence of violent life events, followed by black males (9%), white females (7%), and white males (5%).

Table 5

Health Perceptions of Adolescents (N=1427) and Violent Life Events (VLE)

Health Perceptions:	Poor	Fair	Good	Excellent	Total
White Female (n=319)					
No VLE	4(1%)	24(8%)	133(42%)	133(42%)	294(93%)
> 1 VLE	1(0%)	7(2%)	9(3%)	8(2%)	25(7%)
Black Female (n=375)					
No VLE	8(2%)	36(10%)	118(32%)	166(44%)	328(88%)
> 1 VLE	4(1%)	8(2%)	16(4%)	19(5%)	47(12%)
White Male (n=346)					
No VLE	0(0%)	34(10%)	183(53%)	110(32%)	327(95%)
> 1 VLE	0(0%)	4(1%)	11(3%)	4(1%)	19(5%)
Black Male (n=387)					
No VLE	5(1%)	66(17%)	162(42%)	120(31%)	353(91%)
> 1 VLE	3(1%)	9(2%)	11(3%)	11(3%)	34(9%)
Total (N=1427)					
No VLE	17(1%)	160(11%)	596(42%)	529(37%)	1302(91%)
> 1 VLE	8(1%)	28(2%)	47(3%)	42(3%)	34(9%)

Frequency (Percentage)

Results displayed on Table 6 reveal that there were no noteworthy trends in terms of health perceptions when analyzed specifically by gender and race sub-groups and the occurrence of non-violent life events. Of the total sample, 71% of participants had reported sustaining a non-violent life event within the past year. Twenty-three percent of participants reported experiencing one non-violent life event within the past year, while 48% reported having more than one non-violent life event within the past year.

In terms of gender and race specific groups, black males had the highest proportion of participants who reported experiencing more than one non-violent life event (55%), and the lowest proportion who reported not having any non-violent life events (22%). By contrast, white females proportionately reported the least occurrence of more than one non-violent life event (40%) and one non-violent life event (21%), and the highest proportion of participants who suffered no non-violent life events (39%) in the past year.

Table 6

Health Perceptions of Adolescents (N=1427) and Non-Violent Life Events (NVLE)

Health Perceptions:	Poor	Fair	Good	Excellent	Total
White Female (n=319)					
No NVLE	3(1%)	6(2%)	59(19%)	54(17%)	122(39%)
1 NVLE	1(0%)	5(2%)	26(8%)	36(11%)	68(21%)
> 1 NVLE	1(0%)	20(6%)	57(18%)	51(16%)	129(40%)
Black Female (n=375)					
No NVLE	2(1%)	10(2%)	40(10%)	56(15%)	108(28%)
1 NVLE	3(1%)	8(2%)	34(9%)	44(12%)	89(24%)
> 1 NVLE	7(2%)	26(7%)	60(16%)	85(23%)	178(48%)
White Male (n=346)					
No NVLE	0(0%)	4(1%)	53(15%)	40(12%)	97(28%)
1 NVLE	0(0%)	13(4%)	36(10%)	30(9%)	79(23%)
> 1 NVLE	0(0%)	21(6%)	105(30%)	44(13%)	170(49%)
Black Male (n=387)					
No NVLE	1(0%)	9(2%)	41(11%)	35(9%)	86(22%)
1 NVLE	3(1%)	11(3%)	45(12%)	27(7%)	86(22%)
> 1 NVLE	4(1%)	55(14%)	87(22%)	69(18%)	215(55%)

(CONTINUED)

Table 6 (CONTINUED)

Health Perceptions of Adolescents (N=1427) and Non-Violent Life Events (NVLE)

Health Perceptions:	Poor	Fair	Good	Excellent	Total
Total (N=1427)					
No NVLE	6(1%)	29(2%)	193(13%)	185(13%)	413(29%)
1 NVLE	7(1%)	37(2%)	141(10%)	137(10%)	322(23%)
> NVLE	12(1%)	122(8%)	309(22%)	249(17%)	692(48%)

Frequency (Percentage)

Table 10 displays several important trends in hurricane exposure scores in terms of health perceptions. As hurricane exposure increased, health perceptions decreased. This notable trend also occurred when hurricane exposure was analyzed in terms of gender, race, and health perceptions. As white females, black females, white males, and black males had increased hurricane exposure, health perceptions decreased.

Means and standard deviations for the Hurricane Exposure Scale (EHS) are also noted on Table 7. The total sample's mean score was 2.09 with a standard deviation of 2.18. When scores were analyzed by race and gender, black

males were found to report the highest hurricane exposure (mean = 2.65) with the largest variance (S.D. = 2.52), followed by white males (mean = 2.09; S.D. = 2.04), followed by black females (mean = 2.03; S.D. = 2.38), and lastly followed by white females (mean = 1.48; S.D. 1.67).

Table 7

Health Perceptions of Adolescents (N=1427) and Hurricane Exposure

Health Perceptions:	Poor	Fair	Good	Excellent	Total
White Female (n=319)					
	2.80	2.16	1.61	1.16	1.48
	(2.28)	(2.24)	(1.86)	(1.40)	(1.67)
Black Female (n=375)					
	3.00	2.64	1.85	1.95	2.03
	(2.45)	(2.97)	(2.07)	(2.45)	(2.38)
White Male (n=346)					
	0	2.66	2.23	1.65	2.09
	(0)	(2.07)	(2.07)	(1.98)	(2.04)
Black Male (n=387)					
	3.63	3.15	2.51	2.50	2.65
	(2.45)	(3.07)	(2.33)	(2.46)	(2.52)
Total (N=1427)					
	3.26	2.77	2.09	1.82	2.09
	(2.42)	(2.71)	(2.09)	(2.10)	(2.18)

Mean (Standard Deviation)

Findings from Table 8 show that there were no notable trends in terms of health perceptions and gender, race, and Persian Gulf War exposure. Twenty-four percent reported that a close relative had been sent to the Persian Gulf during war-time mobilization. Thirty-six percent of black males and 31% of black females reported that a close relative had been sent to the Persian Gulf. Alternately, only 11% of white males and 15% of white females reported that they had a close relative sent to the Persian Gulf.

Table 8

Health Perceptions of Adolescents (N=1427) and War Exposure

Health Perceptions:	Poor	Fair	Good	Excellent	Total
White Female (n=319)					
No Exposure	4(1%)	26(8%)	122(38%)	122(38%)	274(85%)
Exposure	1(0%)	5(2%)	20(7%)	19(6%)	45(15%)
Black Female (n=375)					
No Exposure	5(1%)	35(9%)	89(24%)	129(35%)	258(69%)
Exposure	7(2%)	9(2%)	45(12%)	56(15%)	117(31%)
White Male (n=346)					
No Exposure	0(0%)	35(10%)	172(50%)	99(29%)	306(89%)
Exposure	0(0%)	3(1%)	22(6%)	15(4%)	40(11%)
Black Male (n=387)					
No Exposure	4(1%)	45(12%)	112(29%)	87(22%)	248(64%)
Exposure	4(1%)	30(8%)	61(16%)	44(11%)	139(36%)
Total (N=1427)					
No Exposure	13(1%)	141(10%)	495(35%)	437(31%)	1086(76%)
Exposure	12(1%)	47(3%)	148(10%)	134(9%)	341(24%)

Frequency (Percentage)

Logistic regression using categorical modeling (CATMOD) was implemented univariately on each of the independent variables of violent life events, non-violent life events, Hurricane Hugo exposure, and Persian Gulf War exposure. Health perceptions of "poor," "fair," and "good" were the outcome responses of interest with "excellent" health perceptions chosen as the referent group.

Results displayed in Table 9 from the univariate analyses of each of the traumatic event independent variables by health perceptions reveal that all traumatic events were statistically significant in terms of health perceptions. In particular, violent life events were statistically significant at the "poor" and "fair" response levels of health perceptions. The estimated odds of participants rating their health as "poor" rather than "excellent" is 0.41 times lower if they did not suffer any violent life events in the past year (or approximately 2.44 times higher if they suffered at least one violent life event in the past year). The estimated odds that participants rated their health as "fair" rather than "excellent" is 0.67 times lower if they did not suffer any violent life events in the past year (or approximately 1.49 times higher if they suffered at least one violent life event in the past year).

Non-violent life events were significant at the "poor" response level of health perceptions. The estimated odds that participants rated their health as "poor" rather than

"excellent" is 0.57 times lower if they did not suffer any non-violent life events in the past year (or approximately 1.75 times higher if they suffered more than one non-violent life event in the past year).

Hurricane Hugo exposure was significant at all levels of "poor," "fair," and "good" health perceptions. The estimated odds that participants rated their health as "poor" rather than "excellent" is 1.24 times higher for each unit increase on the hurricane exposure scale. The estimated odds that participants rated their health as "fair" rather than "excellent" is 1.18 times higher for each unit increase on the hurricane exposure scale. Also, the estimated odds that participants rated their health as "good" rather than "excellent" is 1.06 times higher for each unit increase on the hurricane exposure scale. This trend among the levels of "poor," "fair" and "good" health perceptions is noteworthy as it demonstrates a dose-response type of relationship between steadily increasing hurricane exposure and steadily decreasing health perceptions.

Persian Gulf War exposure was significant on the level of "poor" health perceptions. The estimated odds that participants rated their health as "poor" rather than "excellent" is 0.58 times lower if they did not have a close relative sent to the Persian Gulf during war-time mobilization (or approximately 1.72 times higher if they had a close relative sent to the Persian Gulf). While the "fair" response was not statistically significant, it does

suggest a possible trend in perceptions. That is, it appears that more negative health perceptions are associated with Persian Gulf War exposure.

Table 9

CATMOD Univariate Logistic Regression Analyses of Health Perceptions of Adolescents (N=1427) and Traumatic Events

Simple Models

Variable	Health Perception	Odds Ratio	95% C.I.
VLE	Poor*	0.41	(0.26, 0.64)
(> 1 VLE)	Fair*	0.67	(0.52, 0.87)
	Good	1.00	(0.81, 1.25)
NVLE	Poor*	0.57	(0.42, 0.77)
(0 NVLE vs.> 1 NVLE)	Fair	1.19	(0.65, 2.17)
	Good	0.94	(0.78, 1.12)
Hurricane **	Poor*	1.24	(1.08, 1.42)
	Fair*	1.18	(1.11, 1.27)
	Good*	1.06	(1.01, 1.12)
War	Poor*	0.58	(0.39, 0.86)
(positive exposure)	Fair	0.96	(0.79, 1.16)
	Good	1.01	(0.89, 1.16)

* = Significant at alpha of 0.05

** = Continuous Variable Referent = Excellent

Data Analysis Results for Hypothesis #2

The second hypothesis, that among adolescents **demographics and personal factors affect health perceptions**, was supported. Specific, directional sub-hypotheses included the following:

(1) Economic support is inversely associated with positive health perceptions.

(2) As academic achievement increases, health perceptions increase.

(3) Intact family structure is positively associated with positive health perceptions.

(4) As religiosity increases, health perceptions increase.

Referents for demographics and personal characteristics were defined as including gender, race, economic support, academic achievement, family structure, and religiosity. Each of these independent variables were operationalized as dichotomous. Therefore, frequency distributions of each of these variables were analyzed in terms of the dependent variable, health perceptions.

Tables 10 through 14 outline specific demographic and personal factor frequency distributions. Table 10 relays overall frequency counts of participants who rated themselves as in "poor" health (2%), "fair" health (13%), "good" health (45%), and "excellent" health (40%).

Table 10 shows that black participants rated themselves as less healthy than white participants. Approximately 11%

of white participants rated themselves as in "poor" (1%) or "fair" (10%) health, while 19% of black participants rated themselves as in "poor" (3%) or "fair" (16%) health. While more whites (89%) rated themselves as in "good" or "excellent" health than blacks (81%), there was a higher proportion of white participants who rated themselves as in "good" (51%) versus "excellent" (38%) health. Alternately, the proportion of blacks who rated themselves as in "good" (40%) versus "excellent" (41%) health was approximately equal.

Similarly, fewer females (2%) rated themselves as in "poor" health as males (1%). However, proportionately more males rated themselves in "fair" (15%) and "good" (50%) health than females who rated themselves in "fair" (11%) and "good" (40%) health. Conversely, more females (47%) rated themselves as in "excellent" health than did males (34%).

Further analysis of this sample in terms of gender and race by health perceptions are also outlined in Table 10. Overall notable characteristics of these distributions reveal that proportionately more black females rated themselves in "poor" health (3%) and in "excellent" health (49%) than white females, black males, or white males. White males had the lowest overall proportion of participants who rated themselves as in "excellent" health (33%) and none who rated themselves as in "poor" health (0%), but the highest proportion of participants who rated themselves in "good" health (56%). Overall, black females

rated themselves in the most extreme categories of "poor" and "excellent," while 67% of white males and 64% of black males rated themselves in the less extreme categories of "fair" and "good" health.

Table 10

Health Perceptions of Adolescents (N=1427) by Gender and Race

Health Perceptions:	Poor	Fair	Good	Excellent
White (n=665)	5(1%)	69(10%)	336(51%)	255(38%)
Black (n=762)	20(3%)	119(16%)	307(40%)	316(41%)
Female (n=694)	17(2%)	75(11%)	276(40%)	326(47%)
Male (n=733)	8(1%)	113(15%)	367(50%)	245(34%)
White Female (n=319)	5(2%)	31(10%)	142(44%)	141(44%)
Black Female (n=375)	12(3%)	44(12%)	134(36%)	185(49%)
White Male (n=346)	0(0%)	38(11%)	194(56%)	114(33%)
Black Male (n=387)	8(2%)	75(19%)	173(45%)	131(34%)
Total (N=1427)	25(2%)	188(13%)	643(45%)	571(40%)

Frequency(Percentage)

Table 11 shows that there were no notable trends in terms of health perceptions when analyzed in terms of economic support. Black females (51%) and black males (51%) had more students who received a lunch subsidy than either white females (6%) or white males (4%).

Table 11

Health Perceptions of Adolescents (N=1427) and Economic Support

Health Perceptions:	Poor	Fair	Good	Excellent	Total
White Female (n=319)					
High*	5(2%)	29(9%)	132(41%)	136(42%)	302(94%)
Low**	0(0%)	2(1%)	10(3%)	5(2%)	17(6%)
Black Female (n=375)					
High*	5(1%)	18(5%)	67(18%)	94(25%)	184(49%)
Low**	7(2%)	26(7%)	67(18%)	91(24%)	191(51%)
White Male (n=346)					
High*	0(0%)	36(10%)	188(54%)	110(32%)	334(96%)
Low**	0(0%)	2(1%)	6(2%)	4(1%)	12(4%)
Black Male (n=387)					
High*	3(1%)	36(9%)	88(23%)	60(16%)	187(49%)
Low**	5(1%)	39(10%)	85(22%)	71(18%)	200(51%)
Total (N=1427)					
High*	13(1%)	119(8%)	475(33%)	400(28%)	1007(71%)
Low**	12(1%)	69(5%)	168(12%)	171(12%)	420(29%)

Frequency (Percentage)

High* = No Lunch Subsidy Low** = Full/Partial Lunch Subsidy

Table 12 shows that there were no notable trends in terms of health perceptions among the sub-stratified gender, race, and family structure populations. Approximately half of the participants lived in "intact" families (49%), as defined as living with both biological parents. However, there were more white females (66%) and white males (63%) who lived in intact families than black females (43%) and black males (32%).

Table 12

Health Perceptions of Adolescent (N=1427) and Family Structure

Health Perceptions:	Poor	Fair	Good	Excellent	Total
White Female (n=319)					
Intact	1(1%)	17(5%)	90(28%)	101(32%)	209(66%)
Non-Intact	4(1%)	14(4%)	52(16%)	40(13%)	110(34%)
Black Female (n=375)					
Intact	3(1%)	12(3%)	63(17%)	81(22%)	159(43%)
Non-Intact	9(2%)	32(8%)	71(19%)	104(28%)	216(57%)
White Male (n=346)					
Intact	0(0%)	20(6%)	123(36%)	74(21%)	217(63%)
Non-Intact	0(0%)	18(5%)	71(21%)	40(11%)	129(37%)
Black Male (n=387)					
Intact	3(1%)	22(6%)	55(14%)	41(11%)	121(32%)
Non-Intact	5(1%)	53(14%)	118(30%)	90(23%)	266(68%)
Total (N=1427)					
Intact	7(1%)	71(5%)	331(23%)	297(21%)	706(49%)
Non-Intact	18(1%)	117(8%)	312(22%)	274(19%)	721(51%)

Frequency(Percentage)

Table 13 shows there were no noteworthy trends in terms of health perceptions among the sub-strata of gender, race, and academic achievement. More participants were high achievers (55%) as defined as enrolled in either an honors or college preparatory English class, than low achievers (45%), who were defined as enrolled in either a general or remedial English class. White males had the highest proportion of high achievers (79%) followed by white females (66%). Black males had roughly equal high (49%) versus low (51%) achievers, while black females had fewest high achievers (32%).

Table 13

Health Perceptions of Adolescents (N=1427) and Academic Achievement

Health Perceptions:	Poor	Fair	Good	Excellent	Total
White Female (n=319)					
High*	3(1%)	11(3%)	85(27%)	111(35%)	210(66%)
Low**	2(1%)	20(6%)	57(18%)	30(9%)	109(34%)
Black Female (n=375)					
High*	0(0%)	14(4%)	36(10%)	68(18%)	118(32%)
Low**	12(3%)	30(8%)	98(26%)	117(31%)	257(68%)
White Male (n=346)					
High*	0(0%)	26(8%)	151(44%)	93(27%)	270(79%)
Low**	0(0%)	12(3%)	43(12%)	21(6%)	76(21%)
Black Male (n=387)					
High*	3(1%)	31(8%)	100(26%)	55(14%)	189(49%)
Low**	5(1%)	44(11%)	73(19%)	76(20%)	198(51%)
Total (N=1427)					
High*	6(1%)	82(6%)	372(26%)	327(23%)	787(55%)
Low**	19(1%)	106(7%)	271(19%)	244(17%)	640(45%)

Frequency (Percentage)

High* = High achievers Low** = Low achievers

Table 14 shows there were no important trends in terms of health perceptions among the substratified gender, race, and religiosity populations. Seventy-two percent of this population described themselves as religious, while only 28% did not.

Table 14

Health Perceptions of Adolescents (N=1427) and Religiosity

Health Perceptions:	Poor	Fair	Good	Excellent	Total
White Female (n=319)					
Religious	4(1%)	14(5%)	100(31%)	109(34%)	227(71%)
Not Relig.	1(1%)	17(5%)	42(13%)	32(10%)	92(29%)
Black Female (n=375)					
Religious	5(1%)	31(8%)	85(23%)	144(38%)	265(70%)
Not Relig.	7(2%)	13(4%)	49(13%)	41(11%)	110(30%)
White Male (n=346)					
Religious	0(0%)	25(7%)	143(41%)	92(27%)	260(75%)
Not Relig.	0(0%)	13(4%)	51(15%)	22(6%)	86(25%)
Black Male (n=387)					
Religious	6(2%)	59(15%)	128(32%)	86(22%)	279(71%)
Not Relig.	2(1%)	16(4%)	45(12%)	45(12%)	108(29%)
Total (N=1427)					
Religious	15(1%)	129(9%)	456(32%)	431(30%)	1031(72%)
Not Relig.	10(1%)	59(4%)	187(13%)	140(10%)	396(28%)

Frequency (Percentage)

Logistic regression using categorical modeling (CATMOD) was performed univariately on each of the independent variables of gender, race, economic support, family structure, academic achievement, and religiosity. Health perceptions of "poor," "fair," and "good" were the outcome responses of interest with "excellent" health perceptions chosen as the referent group.

Results from the univariate analyses of each of the independent variables of demographics and personal factors by health perceptions displayed in Table 15 reveals that gender, race, family structure and academic achievement were statistically significant in terms of health perceptions. Economic support and religiosity were not significant in terms of health perceptions.

Gender was statistically significant at the "fair" and "good" response levels of health perceptions. Females had more negative health perceptions. The estimated odds of participants rating their health as "fair" rather than "excellent" is 0.71 times lower if they were male (or approximately 1.41 times higher if they were female). Also, the estimated odds that participants rated their health as "good" rather than "excellent" is 0.75 times lower if they were male (or approximately 1.33 times higher if they were female).

Race was statistically significant at the "poor" and "good" response levels of health perceptions. The estimated odds of participants rating their health as "poor" rather

than "excellent" is 0.56 times lower if they were white (or 1.79 times higher if they were black). Conversely, the estimated odds that participants rated their health as "good" rather than "excellent" is 1.16 times higher if they were white (or .86 times lower if they were black). It appears that blacks are more likely than whites to rate their health as "poor" rather than "excellent," while whites are more likely than blacks to rate their health as "good" rather than "excellent."

There is a trend that associates increasingly poorer health perceptions with participants from non-intact families. Family structure was statistically significant at the "poor" and "fair" response levels of health perceptions. The estimated odds of participants rating their health as "poor" rather than "excellent" is 0.60 times lower if they lived with both biological parents (or 1.67 times higher if they did not live with both biological parents). The estimated odds of participants rating their health as "fair" rather than "excellent" is 0.75 times lower if they lived with both biological parents (or 1.33 times higher if they did not live with both biological parents).

Academic achievement was statistically significant at the "poor" and "fair" response levels of health perceptions. The estimated odds of participants rating their health as "poor" rather than "excellent" is 0.49 times lower if they were high academic achievers (or 2.04 times higher if they were low academic achievers). The estimated odds of

participants rating their health as "fair" rather than "excellent" is 0.76 times lower if they were high academic achievers (or 1.32 times higher if they were low academic achievers).

Table 15

CATMOD Univariate Logistic Regression Analyses of Health Perceptions and Demographics and Personal Factors (N=1427)

Simple Models

Variable	Health Perception	Odds Ratio	95% C.I.
Gender	Poor	1.26	(0.82, 1.94)
(Female)	Fair*	0.71	(0.60, 0.84)
	Good*	0.75	(0.67, 0.84)
Race	Poor*	0.56	(0.34, 0.92)
(Black)	Fair	0.85	(0.72, 1.00)
	Good*	1.16	(1.04, 1.30)
Family Structure	Poor*	0.60	(0.38, 0.93)
(Not Intact)	Fair*	0.75	(0.63, 0.89)
	Good	0.99	(0.88, 1.11)
Academic Achieve.	Poor*	0.49	(0.31, 0.78)
(Low)	Fair*	0.76	(0.64, 0.90)
	Good	1.01	(0.90, 1.13)

* = Significance at alpha of 0.05 Referent = Excellent

Data Analysis Results for Hypothesis #3

The third hypothesis, that among adolescents **as protective factors increase, health perceptions increase,** was supported. The sub-hypotheses for Hypothesis #3 included:

(1) As social support increases, health perceptions increase.

(2) As self-efficacy increases, health perceptions increase.

Social support and self-efficacy were each treated as continuous variables. Therefore, means and standard deviations of each of these variables were analyzed in terms of the dependent variable, health perceptions. Tables 16 and 17 illustrate these descriptive results.

Table 16 shows several important trends in social support scores in terms of health perceptions. As social support increased, health perceptions increased. This notable trend also occurred when mean social support scores were analyzed in terms of gender and race by health perceptions. Black females, white males, and black males had steadily increasing mean social support scores as health perceptions continued to increase from "poor" to "excellent." White females had steadily increasing mean social support scores as health perceptions increased from "fair" to "excellent."

Means and standard deviations for this sample's scores on the Index of Social Support (CISS) are also noted on

Table 16. The total sample's mean score was 26.13 with a standard deviation of 9.37. When scores were sub-stratified by race and gender, black females were found to report the least social support (mean = 23.53) with the largest variance (S.D. = 9.64), followed by white females (mean = 24.72; S.D. = 9.42), followed by black males (mean = 26.96; S.D. = 9.37). White males reported the highest social support with mean scores of 29.29 and the least variance (S.D. = 9.10).

Table 16

Health Perceptions of Adolescents (N=1427) and Social Support

Health Perceptions:	Poor	Fair	Good	Excellent	Total
White Female (n=319)					
	19.20	18.42	23.58	27.44	24.72
	(13.08)	(9.67)	(8.92)	(9.73)	(9.42)
Black Female (n=375)					
	10.75	18.75	21.62	26.90	23.53
	(8.65)	(10.48)	(8.78)	(10.13)	(9.64)
White Male (n=346)					
	0	26.58	28.69	31.20	29.29
	(0)	(9.14)	(9.56)	(8.30)	(9.10)
Black Male (n=387)					
	24.38	24.55	26.88	28.60	26.96
	(10.64)	(9.27)	(9.73)	(8.69)	(9.31)
Total (N=1427)					
	16.80	22.59	25.60	28.28	26.13
	(10.17)	(9.59)	(9.30)	(9.34)	(9.37)

Mean (Standard Deviation)

Table 17 shows several important trends in self-efficacy scores in terms of health perceptions. As self-efficacy increased, health perceptions increased. This notable trend also occurred when mean self-efficacy scores were analyzed in terms of gender and race by health perceptions. White and black females and white males all had steadily increasing mean self-efficacy scores as health perceptions continued to increase from "poor" to "excellent." Black males had steadily increasing mean self-efficacy scores as health perceptions increased from "fair" to "excellent."

Means and standard deviations for this sample's scores on the Self-Efficacy Scale (SES) are also noted on Table 17. The total sample's mean score was 31.15 with a standard deviation of 10.78. When scores were sub-stratified by race and gender, white males were found to report the least self-efficacy (mean = 29.73; S.D. = 10.81), followed by equal mean scores between white and black females (means = 31.57). Black males reported the highest self-efficacy with mean scores of 31.68 (S.D. = 10.81).

Table 17

Health Perceptions of Adolescents (N=1427) and Self-Efficacy

Health Perceptions:	Poor	Fair	Good	Excellent	Total
White Female (n=319)					
	23.00	24.16	28.65	36.45	31.57
	(8.94)	(10.31)	(10.40)	(10.99)	(10.63)
Black Female (n=375)					
	16.08	26.00	28.71	35.97	31.57
	(11.49)	(10.79)	(10.39)	(12.00)	(11.27)
White Male (n=346)					
	0	25.84	28.64	32.87	29.73
	(0)	(10.32)	(9.98)	(11.03)	(10.36)
Black Male (n=387)					
	28.88	28.39	30.95	34.70	31.68
	(17.08)	(10.87)	(10.42)	(10.91)	(10.81)
Total (N=1427)					
	21.56	26.62	29.28	35.18	31.15
	(12.77)	(10.65)	(10.28)	(11.31)	(10.78)

Mean (Standard Deviation)

Logistic regression using categorical modeling (CATMOD) was implemented univariately on each of the protective variables of social support and self-efficacy. Health perceptions of "poor," "fair," and "good" were the outcome responses of interest with "excellent" health perceptions chosen as the referent group.

Results from the univariate analyses of each of the protective variables by health perceptions displayed in Table 18 reveal that both of the protective factors of social support and self-efficacy were statistically significant in terms of health perceptions.

Social support was statistically significant at every response level of "poor," "fair," and "good" health perceptions. The estimated odds of participants rating their health as "poor" rather than "excellent" is 0.90 times lower for one unit increase in social support scores (or 1.11 times higher for one unit decrease in social support scores). The estimated odds of participants rating their health as "fair" rather than "excellent" is 0.94 times lower for one unit increase in social support scores (or 1.06 times higher for one unit decrease in social support scores). The estimated odds of participants rating their health as "good" rather than "excellent" is 0.97 times lower for one unit increase in social support scores (or 1.03 times higher for one unit decrease in social support scores). This trend among the levels of "poor," "fair" and "good" health perceptions is noteworthy as it demonstrates a

dose-response type of relationship between steadily increasing social support scores and steadily increasing health perceptions.

Self-efficacy was statistically significant at every response level of "poor," "fair," and "good" health perceptions. The estimated odds of participants rating their health as "poor" rather than "excellent" is 0.90 times lower for one unit increase in self-efficacy scores (or 1.11 times higher for one unit decrease in self-efficacy scores). The estimated odds of participants rating their health as "fair" rather than "excellent" is 0.93 times lower for one unit increase in self-efficacy scores (or 1.08 times higher for one unit decrease in self-efficacy scores). The estimated odds of participants rating their health as "good" rather than "excellent" is 0.95 times lower for one unit increase in self-efficacy scores (or 1.05 times higher for one unit decrease in self-efficacy scores). This trend among the levels of "poor," "fair" and "good" health perceptions is noteworthy as it demonstrates a dose-response type of relationship between steadily increasing self-efficacy scores and steadily increasing health perceptions.

Table 18

CATMOD Univariate Logistic Regression Analyses of Health Perceptions and Protective Factors (N=1427)

Simple Models

Variable	Health Perception	Odds Ratio	95% C.I.
Social Support **	Poor*	0.90	(0.85, 0.93)
	Fair*	0.94	(0.93, 0.96)
	Good*	0.97	(0.96, 0.98)
Self-Efficacy **	Poor*	0.90	(0.86, 0.93)
	Fair*	0.93	(0.92, 0.95)
	Good*	0.95	(0.94, 0.96)

* = Significant at alpha of 0.05

** = Continuous Variable Referent = Excellent

Summary of Data Analysis

The univariate analyses of each of the independent and protective variables with health perceptions showed that all of the traumatic events of violent life events, non-violent life events, Hurricane Hugo exposure, and Persian Gulf War exposure were statistically significant. Several of the demographics and personal factors were statistically

significant as well; these included gender, race, family structure and academic achievement. Additionally, both protective factors, social support, and self-efficacy, were statistically significant.

In order to control for the confounding influences of each of the hypothesized independent and protective variables on each other in terms of their statistical association with health perceptions, all variables were run together multivariately using the CATMOD logistic regression procedure. Backwards stepwise regression was implemented until the final model was found.

All traumatic events, namely violent life events, non-violent life events, Hurricane Hugo exposure, and Persian Gulf War exposure, and all demographics and personal factors, namely gender, race, economic support, family structure, academic achievement, and religiosity, and both protective factors, namely social support and self-efficacy, comprised the variables for the initial model. These initial variables were analyzed multivariately using the CATMOD procedure with "excellent" health perceptions as the referent group for the outcome variable.

Six iterations were performed until a final model was found where all retained variables were statistically significant. Upon each iteration after the initial analysis, one non-significant variable was deleted from further analysis. Variables deleted after the first analysis included economic support, academic achievement,

religiosity, Persian Gulf War exposure, and family structure, respectively.

The final multivariate model with all significant variables is noted in Table 19. After discussing the significance of each of these variables, the final model will be discussed in terms of this study's three hypotheses.

Violent life events were statistically significant only at the "poor" response level of health perceptions, when the effects of all of the other variables in the final model were controlled. The estimated odds of participants rating their health as "poor" rather than "excellent" is 0.60 times lower if they had not suffered a violent life event in the past year (or 1.67 times higher if they suffered at least one violent life event in the past year). Though the "fair" response level was not statistically significant, it does relay a trend in terms of violent life events and health perceptions. That is, at least between these two response levels of "poor" and "fair," it appears that decreasing health perceptions are associated with the occurrence of at least one violent life event.

Non-violent life events were statistically significant only at the "fair" response level of health perceptions, when the effects of all of the other variables in the final model were controlled. The estimated odds of participants rating their health as "fair" rather than "excellent" is 0.72 times lower if they had not suffered a non-violent life event in the past year (or 1.39 times higher if they

suffered more than one non-violent life event in the past year). There were no notable trends between health perception response levels and the reported occurrence of non-violent life events.

Hurricane Hugo exposure scores were statistically significant at all response levels of "poor," "fair," and "good" health perceptions, when the effects of all of the other variables in the final model were controlled. The estimated odds of participants rating their health as "poor" rather than "excellent" is 1.19 times higher per one unit increase on the hurricane exposure score. The estimated odds of participants rating their health as "fair" rather than "excellent" is 1.11 times higher per one unit increase on the hurricane exposure score. The estimated odds of participants rating their health as "good" rather than "excellent" is 1.03 times higher per one unit increase on the hurricane exposure score. This trend among the levels of "poor," "fair" and "good" health perceptions is noteworthy as it demonstrates a dose-response type of relationship between steadily increasing hurricane exposure scores and steadily decreasing health perceptions.

Gender was statistically significant at the "fair" and "good" response levels of health perceptions, when the effects of all of the other variables in the final model were controlled. The estimated odds of participants rating their health as "fair" rather than "excellent" is 0.68 times lower if they were male (or 1.47 times higher if they were

female). Likewise, the estimated odds of participants rating their health as "good" rather than "excellent" is 0.74 times lower if they were male (or 1.35 times higher if they were female). There appears to be a trend that associates females with decreasing health perceptions at the "fair" and "good" levels of response.

Race was statistically significant at the "poor" and "good" response levels of health perceptions, when the effects of all of the other variables in the final model were controlled. The estimated odds of participants rating their health as "poor" rather than "excellent" is 0.60 times lower if they were white (or 1.67 times higher if they were black). By contrast, the estimated odds of participants rating their health as "good" rather than "excellent" is 1.15 times higher if they were white (or 0.87 times lower if they were black).

Though the "fair" response level was not statistically significant in terms of race, it does suggest a trend among the lower responses of health perceptions. It seems that blacks have greater odds of self-rating worse health than whites. Whites, by contrast, have a greater likelihood of rating their health as "good" rather than "excellent" than blacks.

Social support scores were statistically significant at the response levels of "poor" and "fair" health perceptions, when the effects of all of the other variables in the final model were controlled. The estimated odds of participants

rating their health as "poor" rather than "excellent" is 0.94 times lower per one unit increase of social support scores (or 1.06 times higher per one unit decrease of social support scores). The estimated odds of participants rating their health as "fair" rather than "excellent" is 0.97 times lower per one unit increase of social support scores (or 1.03 times higher per one unit decrease of social support scores). Though the "good" health perception response level is not statistically significant, it is important to note because is relays an important trend among these response levels in terms of social support. This trend among the levels of "poor," "fair" and "good" health perceptions demonstrates a dose-response type of relationship between steadily increasing social support scores and steadily increasing health perceptions.

Self-efficacy scores were statistically significant at all of the response levels of "poor," "fair," and "good" health perceptions, when the effects of all of the other variables in the final model were controlled. The estimated odds of participants rating their health as "poor" rather than "excellent" is 0.93 times lower per one unit increase of self-efficacy scores (or 1.08 times higher per one unit decrease of self-efficacy scores). The estimated odds of participants rating their health as "fair" rather than "excellent" is 0.95 times lower per one unit increase of self-efficacy scores (or 1.05 times higher per one unit decrease of self-efficacy scores). Likewise, the estimated

odds of participants rating their health as "good" rather than "excellent" is 0.96 times lower per one unit increase of self-efficacy scores (or 1.04 times higher per one unit decrease of self-efficacy scores). This noteworthy trend among the levels of "poor," "fair" and "good" health perceptions demonstrates a dose-response type of relationship between steadily increasing self-efficacy scores and steadily increasing health perceptions.

Table 19

CATMOD Multivariate Logistic Regression Analysis of Health Perceptions and Demographics, Personal Factors, Traumatic Events, and Protective Factors (N=1427)

Final Model

Variable	Health Perception*	Odds Ratio	95% C.I.
VLE	Poor*	0.57	(0.35, 0.92)
(≥ 1 VLE)	Fair	0.85	(0.64, 1.11)
	Good	1.08	(0.85, 1.36)
NVLE	Poor	0.97	(0.59, 1.61)
(0 NVLE vs.> 1 NVLE)	Fair*	0.72	(0.57, 0.90)
	Good	1.02	(0.89, 1.16)
Hurricane **	Poor*	1.19	(1.03, 1.37)
	Fair*	1.11	(1.04, 1.20)
	Good	1.03	(0.97, 1.09)
Gender	Poor	1.07	(0.68, 1.70)
(Female)	Fair*	0.68	(0.57, 0.82)
	Good*	0.74	(0.66, 0.84)
Race	Poor*	0.60	(0.36, 0.99)
(Black)	Fair	0.88	(0.74, 1.06)
	Good*	1.15	(1.02, 1.30)

(CONTINUED)

Table 19 (CONTINUED)

CATMOD Multivariate Logistic Regression Analyses of Health Perceptions with Demographics, Personal Factors, Traumatic Events, and Protective Factors (N=1427)

Final Model

Variable	Health Perception*	Odds Ratio	95% C.I.
Social Support **	Poor*	0.94	(0.90, 0.99)
	Fair*	0.97	(0.95, 0.99)
	Good	0.99	(0.97, 1.00)
Self-Efficacy **	Poor*	0.93	(0.89, 0.97)
	Fair*	0.95	(0.93, 0.97)
	Good*	0.96	(0.94, 0.97)

* = Significance at alpha of 0.05

** = Continuous Variable * Referent = Excellent

Summary of Final Model Analysis in Terms of Hypotheses

The first hypothesis, that among adolescents **traumatic events are inversely associated with health perceptions**, was supported both on the univariate and multivariate analyses. Not all of the sub-hypotheses were supported, however, when

the effects of confounders was controlled. The sub-hypotheses will be discussed separately as follows:

(1) Violent life events are inversely associated with positive health perceptions. This sub-hypothesis was supported both on the univariate as well as on the multivariate analyses.

(2) Non-violent life events are inversely associated with positive health perceptions. This sub-hypothesis was supported both on the univariate as well as on the multivariate analyses.

(3) Hurricane Hugo exposure is inversely associated with positive health perceptions. This sub-hypothesis was supported both on the univariate and multivariate analyses. Additionally, there was a dose-response relationship between increasing hurricane exposure scores and decreasing health perceptions, even when the effects of other variables were controlled.

(4) Persian Gulf War exposure is inversely associated with positive health perceptions. This sub-hypothesis was supported only on the "poor" response level on the univariate analysis. When the effects of other confounders were controlled for, the effects of the war exposure lost its saliency. Therefore, this sub-hypothesis was not supported.

The second hypothesis, that among adolescents **demographics and personal factors affect health perceptions** was supported. None of the sub-hypotheses were supported,

however, when the effects of confounders was controlled. The sub-hypotheses will be discussed separately as follows:

(1) Economic support is inversely associated with positive health perceptions. This sub-hypothesis was not supported on either the univariate or multivariate analyses.

(2) As academic achievement increases, health perceptions increase. This sub-hypothesis was supported on the "poor" and "fair" response levels on the univariate analysis. However, when the effects of other confounders were controlled for, the effects of academic achievement were not statistically significant. Therefore, this sub-hypothesis was not supported.

(3) Intact family structure is positively associated with positive health perceptions. This sub-hypothesis was supported on the "poor" and "fair" response levels on the univariate analysis. However, when the effects of other confounders were controlled for, the effects of family structure were not statistically significant. Therefore, this sub-hypothesis was not supported.

(4) As religiosity increases, health perceptions increase. This sub-hypothesis was not supported on either the univariate or multivariate analyses.

Though none of the specific sub-hypotheses were supported, gender and race retained their significance on both the univariate as well as the multivariate analyses. It appears that worse health perceptions are associated with the demographic variables of being female and black.

Therefore, Hypothesis #2 was supported.

The third hypothesis, that among adolescents **as protective factors increase, health perceptions increase,** was supported. The sub-hypotheses for Hypothesis #3 included:

(1) As social support increases, health perceptions increase. This sub-hypothesis was supported both on the univariate and multivariate analyses. Additionally, there was a dose-response relationship between increasing social support scores and increasing health perceptions, even when the effects of other variables were controlled.

(2) As self-efficacy increases, health perceptions increase. This sub-hypothesis was supported both on the univariate and multivariate analyses. There was a dose-response relationship between increasing self-efficacy scores and increasing health perceptions, even when the effects of other variables were controlled.

CHAPTER V: DISCUSSION

Conclusions

This study examined the relationship between traumatic events, demographics and personal factors, and protective factors with health perceptions among adolescents. Results from this study substantiate relationships posited in the Adolescent Trauma Conceptual Model. In particular, results from this study indicate that traumatic events are inversely associated with health perceptions among adolescents. Violent life events, non-violent life events, and hurricane exposure were all significantly associated with poorer health perceptions.

Results additionally suggest that demographics are associated with adolescent health perceptions. In particular, females and blacks had poorer health perceptions. Also, as protective factors increase, health perceptions become more favorable. Social support and self-efficacy were both associated with better health perceptions. Black females who suffered at least one violent life event, and more than one non-violent life event, who were highly exposed to Hurricane Hugo, and had little social support and self-efficacy, were most likely to suffer from poor health perceptions.

Nine percent of the total sample reported being the

victim of a violent life event within the past year. While black participants (11%) reported a higher incidence of violent life events than whites (6%), as is consistent with national estimates (U.S. Congress OTA, 1986), more white females (7%) and black females (12%) reported suffering at least one violent life event than white males (5%) and black males (9%), respectively. These data are in conflict with most national estimates (U.S. Congress OTA, 1986) that assert that males are at a higher risk to be victimized by violence. It may be that females are less likely to seek medical and legal aid after being victimized, and that current national estimates are based on police and emergency room reports rather than victims' self-reports.

A high number of participants reported suffering more than one non-violent life event in the past year (48%). Once again, blacks appeared to be more vulnerable to these major life event stressors than whites. These findings are consistent with current national estimates that imply that black adolescents are more likely to come from poor, broken, single-parent families, and are more likely to fail in school (U.S. Congress OTA, 1986).

Reporting only one non-violent life event was not significantly associated with health perceptions. Non-violent life events were significantly associated with health perceptions only when the participants experienced more than one non-violent life event in the past year. This is consistent with Coddington's (1972a; 1972b) and Johnson

and McCutcheon's (1980) assertions that major life event stressors have an additive effect on worsening health. This may explain why the discrete demographic and personal factors of economic status, family structure, and academic achievement were non-significant in terms of health perceptions. Poor financial status, a broken family, and poor school performance as isolated factors perhaps do not influence health perceptions.

Twelve months after it devastated much of South Carolina, Hurricane Hugo's reported effect on these participants had a strong dose-response relationship with health perceptions. That is, the greater the reported hurricane exposure, the less favorable the reported health perceptions. These results mirror those of adult disaster studies that assert that emotional and physical adverse symptoms can persist for as long as three years after experiencing a disaster (Bennet, 1970; Gleser, Green, & Winget, 1981; Hardin & Cohen, 1988; Logue, 1978; Murphy, 1984; Murphy, 1988).

These results also are consistent with a related CAHP study by Hardin and colleagues' (1993) who found an association between increased symptoms of psychological distress and increased hurricane exposure among sampled adolescents. It is reasonable to extrapolate results from both of these studies and conclude that adolescents who are heavily exposed to the worst effects of a hurricane may not only experience more adverse psychological symptoms but feel

less healthy. In this light, it is reasonable to entertain Millstein's (1989) contention that adolescents' perceptions of health are more sophisticated than the mere absence of physical illness.

Persian Gulf War Exposure did not have an association with health perceptions in this population, when the effects of other confounding variables were taken into account. There are several plausible explanations for this. The effects of the War were measured during the first month of United States military mobilization. At this particular point in time, there were no battles mounted and no casualties reported. Indeed, diplomatic efforts were still in progress to try to alleviate tensions peacefully. Thus, the effects of the war were not measured at a peak stress period.

Furthermore, war exposure was measured with one item on the CAHP Survey which asked participants if they "had a close relative sent to the Middle East." This one item could not have adequately discriminated the differential impact that war could have had on these adolescents. For instance, one could assume that a teenager would be more stressed if one or both parents, rather than another relative, were deployed to the Persian Gulf. Other related sources of stress that were not measured included whether the close relative who deployed was assigned to a hazardous unit.

School B is located near a major military installation

with 26% of its student body comprised of military dependents. Therefore, it seems reasonable to assume that the majority of the participants who affirmed that they had a close relative sent to the Middle East in the Fall of 1990 were active-duty military dependents. Teenage children of reservists and national guard members sent to the Middle East at this time may have responded differently to this stress. This deployment separation may have been less predictable to children of reservists than active-duty parents. Rosen and Mogham (1991) contend that predictability in deployments is related to self-reported well-being among military family members.

If current studies are accurate in depicting adolescents' views of health as being closely linked with physical appearance (Duchen-Smith, Turner, & Jacobsen, 1987; Hardin, Misener, et al., 1993; Magilvy et al., 1987; McPherson & MacFarlane, 1988), the finding that females rated their health lower than males is not surprising. The present-day ideal of female beauty as painfully thin is unrealistic for most females to attain. Unfortunately, teenage girls probably are most vulnerable to the message of feminine beauty that is portrayed in today's culture.

Additionally, that females rate their health more poorly than males is consistent with results from disaster studies that reported that females experienced more distress symptoms after a natural disaster than males (Hardin et al., 1993; Murphy, 1987). It is possible that these teenage

girls have more adverse psychological symptoms and consequently report feeling less healthy.

That black adolescents have poorer health perceptions than white adolescents is not surprising. The Congressional Office of Technology Assessment (1986) declared that black youth are particularly at risk for a host of health-related problems.

Prior CAHP-related research by Hardin and colleagues (1993) indicated that white adolescents reported more symptoms of psychological distress than black adolescents. Similarly, Garrison and colleagues (1993) reported that white adolescents were 2.27 times more likely than black adolescents to suffer Post-Traumatic Stress Disorder (PTSD) one year after Hurricane Hugo. These researchers both posit, however, that there may be racial bias in the way black adolescents report or perceive their symptoms of distress (Garrison et al., 1993; Hardin et al., 1993). Therefore, black adolescents may deny their specific symptoms of distress yet still feel globally less healthy than their white counterparts.

Social support had a strong dose-response relationship with health perceptions. That is, the greater the reported social support, the greater the reported health perceptions. This finding is consistent with tenets of adolescent theories. Adolescence is characterized as a time in the life cycle when interpersonal relations, particularly peer relations, are of paramount importance (Berndt & Ladd, 1989;

Peterson & Hamburg, 1986; Piaget & Inhelder, 1958). Indeed, many teen therapy programs utilize peer support mechanisms to decrease stress symptoms among their adolescent participants (Compas, Slavin et al., 1986; Eggert & Herting, 1991; Peterson & Hamburg, 1986).

Self-efficacy also had a strong dose-response relationship with health perceptions. That is, the greater the reported self-efficacy, the greater the reported health perceptions. These results are consistent with those of Weekes and Savedra (1988), who contend that self-efficacy is associated with better emotional health among adolescents.

Economic support, family structure, academic achievement, and religiosity were not significantly associated with health perceptions. It may be that these factors are less important in terms of health perceptions than either the teenagers' actual perceptions of the supportive relationships they feel they can rely on, or how efficacious they believe they are.

Implications

Many scientists assert that "hassles" or everyday stressors are better predictors of health than traumatic events (DeLongis et al., 1982; Kanner et al., 1981; Wagner et al., 1988). Results from this study, however, found an inverse association between violent life events, non-violent life events, and hurricane exposure with health perceptions. Furthermore, hurricane exposure demonstrated a dose-response relationship with health perceptions; that is, as hurricane

exposure increased, health perceptions decreased. Therefore, traumatic event stress can be postulated as predictive of health perceptions.

That exposure to Hurricane Hugo would have such a strong inverse association with health perceptions among adolescents has implications for the South Florida teenagers who sustained the ravages of Hurricane Andrew. Loss of property was more substantial with more families displaced for longer periods of time. It is reasonable to believe that teenagers exposed to Hurricane Andrew also will suffer worse health perceptions.

That females reported a higher rate of violent life events than males is in conflict with national estimates (U.S. Congress OTA, 1986). If these self-reported violence statistics are generalizable, current research and programs aimed at decreasing the incidence of violence among young black males, though laudable, may be off-target. Females may be at greater risk for violence that is under-reported.

Recommendations

Traumatic events were inversely associated with health perceptions among adolescents, as was hypothesized. While it is reasonable to postulate that traumatic events can predict health perceptions among adolescents, prospective studies are necessary before this cause-effect relationship can be avowed with any certainty.

Results from this study affirm that disaster stress responses by adolescents mirror those of adults. Solomon

(1989) maintained, however, that adolescents lacked the experiential resources to deal with disaster stress as effectively as adults. Therefore, it is implied that adolescents' responses to disasters may be worse than adults. More studies are needed to compare adolescent and adult responses to disaster.

Social support and self-efficacy were both strongly positively associated with health perceptions among adolescents. While these findings imply that these protective variables may mediate the adolescent response to traumatic event stressors in terms of health perceptions, interaction effects must be studied before this assertion may be substantiated. Likewise, prospective studies are needed to determine if high levels of social support and self-efficacy antecede better health perceptions.

That adolescents with high social support and high self-efficacy had better health perceptions has direct implications for intervention programs. Intervention programs that build on social support and enhance self-efficacy should be most effective in enhancing health perceptions among adolescents. In particular, black females who have suffered traumatic event stressors would be most likely to benefit from this type of therapy.

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Appendices

Appendix A

Sample Invitation to Participate

Informed Consent for Parents and Students

Fictional County School District

High School A

Anywhere Drive

Anywhere, SC 29xxx

CAROLINA ADOLESCENT HEALTH PROJECT

August 25, 1990

Dear Students and Parents:

I am pleased to tell you that the Freshmen and Sophomores at our school have been selected to participate in the Carolina Adolescent Health Project which is being conducted by the University of South Carolina College of Nursing over the next three years. The project includes annual written health surveys and a physical exam. Students will receive $5.00 each time they participate. For a student to participate, both the student and parent must sign this form and return it to the home room teacher.

The health survey measures health, stress, feelings, and coping and takes about 40 minutes to complete. If you would like to see the survey, copies are available for you to look over in the administrative office. Survey scores will not become a part of the school record. Neither

parents nor school officials will see student's individual surveys or scores; however, total group responses will be shared with the students and school and used for health assessment purposes and scientific reports.

The physical is a general nursing exam which includes vital signs, eyes, ears, heart, lungs, and other body systems. Neither pelvic nor breast exams will be conducted; nor will blood be drawn. The physical takes approximately thirty minutes and will be completed annually at the school by a nurse specialist. The nurses will send you a letter if they believe your child needs additional checkups or treatment. The nurses will be professionally bound to keep all information related to the project in the strictest confidence.

The nurses also will be recording Freshmen and Sophomore average grades, absences, detention, failures, and withdrawals so that they can see how the students progress over three years. No individual results or information which would identify students will be published.

Although we encourage your participation, you may refuse to do so now or at any time in the future and this would not affect your school records. However, we hope you will take advantage of this opportunity. If you have any questions, you may call Sally Doe, R.N., Ph.D., Project Director, at the Carolina Adolescent Health Office at (803) 777-xxxx. Please keep the attached copy of this letter for your records.

Sincerely,

Thomas Doe, Ph.D., Principal

MY CHILD MAY PARTICIPATE_____(Parent Signature)

I WISH TO PARTICIPATE_____(Child's Signature)

PRINT CHILD'S NAME_____

CHILD'S SOCIAL SECURITY NUMBER___-___-____ BIRTHDATE_____

SIGN AND RETURN ONE COPY OF THIS FORM TO YOUR HOME ROOM TEACHER TOMORROW! (KEEP ONE COPY FOR YOUR RECORDS).

Appendix B

Instructions for Administration of Fall, 1990 Survey

ONLY STUDENTS WHO ARE ON YOUR ROSTER MAY COMPLETE THE FALL SURVEY!

Write your name and "Carolina Adolescent Health Project" on the blackboard.

Introduce yourself. FALL

Place booklets and pencils on desks while teacher gives out answer sheets pre-identified by Name and CAHP ID

If someone does NOT have an answer sheet, check to see if he/she is on the project roster. If not, child may NOT participate. If yes, give a blank answer sheet and have him fill in name and English class #.

The administrator should write in CAHP # on answer sheet.

For students who are not there, mark "Withdrawn" or "Refused" or "In another class" etc. on top of class roster as appropriate.

Ask students NOT to change their name or I.D. number on their answer sheet.

Have them bubble in CAHP number in SS# box at top of answer sheet.

SAY: "This is not a test. There are no right or wrong answers. Use your #2 pencils to fill in your choice.

Remember to erase completely. It is very important that you only fill in ONE circle for each item. Move as quickly as you can!"

You will get paid $5.00 today.

******It is vital that a "Snowball" effect of refusing to complete the survey does not occur! Therefore, if a child refuses say, "You don't have to but we really wish you would because you can help us understand teens a lot better."

Pace the kids to move quickly! Answer questions as they complete the test. Five minutes before end of class: Say, "You have five minutes left."

When student has finished, look at answer sheet to check for completion. Verify CAHP # bubbled in. Check to confirm no stray marks on answer sheet. **Pay the student $5.00 and have them sign the Signature Form.** Put all answer sheets in pre-marked manila envelope for each class.

Hand all envelopes to Stephanie in the parking lot after school.

Appendix C

Life Events Scale

Indicate the events that have happened to you in the last year by marking the appropriate response on your answer sheet.

1 = Did not happen

2 = Happened and was good

3 = Happened and was bad

4 = Happened and was neither good nor bad

1. Moving to a new home

   1 2 3 4

2. Changing to a new school

   1 2 3 4

3. Serious illness or injury of family member or close friend.

   1 2 3 4

4. Parents divorced or separated

   1 2 3 4

5. Mother or father lost job

   1 2 3 4

6. Death of a family member or close friend

   1 2 3 4

7. Parent getting into trouble with law

   1 2 3 4

8. New stepmother or stepfather

1 2 3 4

9. Change in parents' financial status

1 2 3 4

10. Injury to self caused by parent or guardian

1 2 3 4

11. Being sent away from home

1 2 3 4

12. Girlfriend getting pregnant (male) or getting pregnant (female)

1 2 3 4

13. Losing a job

1 2 3 4

14. Being raped

1 2 3 4

15. Repeating a school grade

1 2 3 4

16. Failing a class

1 2 3 4

17. Being held up with a gun or a knife

1 2 3 4

18. Being touched in your private areas in a way that made you feel uncomfortable

1 2 3 4

19. Getting into trouble with police

1 2 3 4

20. Major personal illness or injury

1 2 3 4

21. Breaking up with boyfriend/girlfriend

1 2 3 4

22. Girlfriend having abortion (male) or having abortion (female)

1 2 3 4

23. Being suspended from school

1 2 3 4

24. Becoming involved with drugs

1 2 3 4

25. Being beaten or attacked

1 2 3 4

Appendix D

Hurricane Hugo Exposure Scale

Mark the number which best describes you on your answer sheet.

1. During Hurricane Hugo, I was with
    1. parents(s)
    2. adult friends or relatives but not my parents
    3. strangers
    4. alone
    5. other
2. Because of Hurricane Hugo, approximately how long did you have to move out of your home?
    1. did not have to move
    2. 1 week
    3. 1 month
    4. 1-2 months
    5. more than 2 months
3. During Hurricane Hugo, was someone important to you badly injured or killed?
    1. yes
    2. no

4. Were you hurt physically as a result of the hurricane?

   1. not at all
   2. a little
   3. some
   4. quite a bit
   5. a great deal

5. Were you afraid that you might be hurt or killed during Hurricane Hugo?

   1. not at all
   2. a little
   3. some
   4. quite a bit
   5. a great deal

Appendix E

Index of Social Support

Mark the number which best describes you in general on your answer sheet.

1 = Not at all like me

2 = A little like me

3 = Somewhat like me

4 = Much like me

5 = Very much like me

1. People have been there when I've needed them.

   1 2 3 4 5

2. There are people who serve as good examples for me in dealing with problems.

   1 2 3 4 5

3. There are people to whom I give and from whom I receive support during difficult periods.

   1 2 3 4 5

4. There are people to whom I can go who can provide me with some ideas or answers to dealing with my problems.

   1 2 3 4 5

5. I depend on my family and friends to help me handle stressful situations.

   1 2 3 4 5

6. There are people in my life who have the same or similar problems as I do, and with whom I can discuss things.

   1 2 3 4 5

7. There are people in my life whom I feel safe with.

   1 2 3 4 5

8. The people around me give me confidence in my ability to cope with stressful events in my life.

   1 2 3 4 5

9. I have a group (or groups) in which I feel I belong.

   1 2 3 4 5

10. The contact I have with my family and friends has a strong positive influence on my moods.

    1 2 3 4 5

Appendix F

Self-Efficacy Scale

Mark the number which best describes you in general on your answer sheet

1 = Not at all like me

2 = A little like me

3 = Somewhat like me

4 = Much like me

5 = Very much like me

1. Once I know what I need to do, I can do it.

   1 2 3 4 5

2. In a new situation, I expect I can handle things.

   1 2 3 4 5

3. I am a confident person.

   1 2 3 4 5

4. I am very effective in solving problems.

   1 2 3 4 5

5. When I'm stressed, I can count on myself to cope successfully.

   1 2 3 4 5

6. I rely on my inner strength to deal with problems.

   1 2 3 4 5

7. The good things that happen to me are largely my own doing.

1 2 3 4 5

8. I'm proud of myself.

1 2 3 4 5

9. I have a high opinion of my abilities.

1 2 3 4 5

10. I believe I use my skills to their best advantage.

1 2 3 4 5

11. I am responsible for the ways I have grown as a person.

1 2 3 4 5

12. I can influence the people in my life.

1 2 3 4 5

13. I am not afraid to make mistakes.

1 2 3 4 5

Appendix G

Informed Consent Form

I agree to fill out the Carolina Adolescent Health Project questionnaire which asks about my feelings and thoughts about myself. I know that all my answers will be private.

I am free to drop out of the study at any time and it will not affect my school records. If some of the questions make me uncomfortable, I do not have to answer them.

If I have questions now or later about this project, I may call Dr. Sally Doe, University of South Carolina, College of Nursing, (803) 777-xxxx.

Date_____

Student Signature_____