DEBBIE CASSIE GIDEON

Stress, Coping Strategies, and Perceived Social Support Among Adults with Brain Injuries (Under the Direction of ROSEMARY E. PHELPS)

The purpose of this study was to examine the stress level, coping strategies, and perceived social support among adults with brain injuries. This research was based on the stress and coping model delineated by Lazarus and Folkman (1984). The sample consisted of 130 research participants (86 men and 44 women), ranging in age from 19 to 72. Participants were obtained from support groups, conferences, and camps sponsored by the Brain Injury Association of Georgia and the Brain Injury Alliance of South Carolina. The research packet included a cover letter, the Demographic Questionnaire, the Index of Clinical Stress, the Coping with Health Injuries and Problems Scale, and the Multidimensional Scale of Perceived Social Support.

Findings revealed a statistically significant negative correlation between stress level and overall perception of social support, as well as between stress level and perceived social support from a significant other. This suggests when individuals have a high overall perception of social support, particularly from a significant other, they experience lower stress levels; and as this perception decreases, their stress level increases. The findings also revealed a significant negative correlation between distraction coping strategies and stress level; this indicates as individuals increase their usage of distraction coping strategies their stress level decreases. Whereas, when they decrease their usage of distraction coping strategies their stress level increases. A significant positive correlation between emotional coping strategies and stress level was also found which indicates as individuals increase their use of emotional coping strategies their stress level increases, and when they decrease their use of emotional coping strategies their stress level decreases. No statistically significant differences were found between coping strategies of adults with brain injuries and time post injury, type of injury (open or closed), or level of injury (mild, moderate, severe).

INDEX WORDS: Stress, Coping Strategies, Social Support, Brain Injuries

STRESS, COPING STRATEGIES, AND PERCEIVED SOCIAL SUPPORT AMONG ADULTS WITH BRAIN INJURIES

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DEDICATION

I dedicate my dissertation to my parents, Deborah S. Gideon and the late Fletcher Gideon, Jr. They instilled values, hope, and determination in order that I may achieve my goals. I am grateful for every word of wisdom they shared. It is because of their love, teaching, understanding, and support that I stand where I do today. I will forever be grateful.

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TABLE OF CONTENTS

	Page
ACKNOWLE	DGMENTSv
LIST OF TAE	BLES ix
CHAPTER	
1	INTRODUCTION
	Statement of the Problem
	Purpose of the Study
	Research Questions and Hypotheses
	Definition of Terms
	Limitations
	Assumptions
2	LITERATURE REVIEW
	Brain Injuries
	Stress
	Coping Strategies
	Social Support
	Stress and Coping Conceptual Framework
	Summary
3	METHODOLOGY
	Sample Size
	Sample Description
	Data Collection Procedures

	Instrumentation
	Data Analyses
4	RESULTS
	Descriptive Statistics
	Findings Related to Research Questions
5	DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS 44
	Implications
	Research Recommendations
	Conclusions
REFERENCE	S
APPENDICES	S
А	LETTER TO PARTICIPANTS
В	DEMOGRAPHIC QUESTIONNAIRE

viii

LIST OF TABLES

Table	Page
3-1	Internal Reliability Coefficients for the CHIP Subscales (by Age and Sex) 26
3-2	Test-Retest Reliability Coefficients (Two Weeks) for the CHIP Subscales 27
4-1	Age and Time Post Injury
4-2	Health Status Pre and Post Injury
4-3	Employment Status Pre and Post Brain Injury
4-4	Descriptive Statistics for the Multidimensional Scale of Perceived Social Support (MSPSS), Index of Clinical Stress (ICS), and Coping with Health Injuries and Problems (CHIP) Scale
4-5	Correlation Matrix for MSPSS and ICS
4-6	ANOVA Table Evaluating Coping Strategies and Severity of Brain Injury 36
4-7	Correlation Matrix for CHIP Scale and Severity of Brain Injury
4-8	Descriptive Statistics for CHIP Scale and Severity of Brain Injury
4-9	Descriptive Statistics for CHIP Scale and Type of Brain Injury
4-10	Correlation Matrix for CHIP Scale and Time Post Injury
4-11	Correlation Matrix for CHIP Scale and ICS

CHAPTER 1

INTRODUCTION

Every minute that passes individuals are experiencing a brain injury somewhere in the world. Everyone is a potential victim while doing daily activities, driving an automobile, or engaging in sports and recreational activities.

In one second, my whole life changed. One moment I was awake and alert; the next, I was involved in a head-on auto accident. Days later my doctors diagnosed me as having suffered a mild head injury, now called mild traumatic brain injury (MTBI). . . . I looked and felt fine save for minor cuts and bruises. All I wanted to know was when I could return to work. In the months that followed, many of the signs of brain injury, or post-concussive syndrome, appeared. It took me years to understand the consequences of my mild traumatic brain injury. None of my doctors fully explained my problems, told me what to expect, or explained how to cope (Stoler & Hill, 1998, p. xv).

Traumatic brain injury (TBI) is the leading cause of death by injury (Kraus & McArthur, 1995). The accuracy of data regarding the incidence of traumatic brain injury is often difficult to obtain due to inaccuracies in reports citing the actual number of persons who are hospitalized as a result of a traumatic brain injury, the exclusion of individuals who die prior to hospitalization (Miller, 1986), and those who do not seek medical care. Traumatic brain injury is a leading cause of death not only in the United States, but in other countries as well. For example, in North and South America, approximately 373,000 people are hospitalized yearly due to a brain injury; 99,000 of which are classified as having moderate to severe injuries (Kraus & Sorenson, 1994).

1

Approximately 25% of the individuals who experience a traumatic brain injury die or experience neurological difficulties (Englander, Hall, Stimpson, & Chaffin, 1992).

Individuals with brain injuries need enormous care; therefore, family members often become caregivers and sometimes take a leave of absence from work or hire needed assistance. In general, intimacy, decision-making, and income are all changed or diminished for the injured individual and his or her family. Many women who are married report they do not have a husband (Mauss-Clum & Ryan, 1981). The intimacy, closeness, and support (i.e., emotional, financial) that the spouse previously received may be nonexistent.

After returning to work, individuals with a brain injury may be unable to return to their pre-injury level of functioning because of their neurological deficits. Therefore, a job reorientation or transfer to a less taxing position might be warranted. Depending upon the severity of the injury the person may not be aware of his or her deficits, which might result in added stress due to an inability to understand why employment changes are transpiring.

Learning to cope is essential to effectively contend with stress resulting from a brain injury. Broadly speaking, coping is a means by which individuals manage stress resulting from internal or external demands (Folkman, 1982). Therefore, individuals may utilize social support and coping strategies to manage their stress. Social support refers to tangible and intangible resources that result in a person feeling cared for by others (Cohen & Syme, 1985; Rook, 1987). Researchers have shown that there is a relationship between social support and well-being. Individuals with high levels of social support have been found to experience low levels of depression and anxiety (Cohen, 1988; Cohen & Wills, 1985; Ross, Lutz, & Lakey, 1999).

Direct positive coping strategies (e.g., problem solving) are very important after a brain injury (Moore & Stambrook, 1992; Willer, Allen, Liss, & Zicht, 1991). Not only are these strategies advantageous for individuals with brain injuries, they are also indirectly advantageous for family members as well. According to Leach, Frank, Bouman, and Farmer (1994), effective use of problem solving and behavioral coping strategies by family members brings about a significantly lower level of depression in the injured individual.

Statement of the Problem

Although coping strategies and social support are well-researched topics in relation to chronic illnesses, limited research exists regarding how these variables affect individuals with brain injuries. Brain injuries may negatively affect family and social relationships, as well as employment and educational status and performance (Brooks, 1991; Elsass & Kinsella, 1987; Englander et al., 1992; Ip, Dornan, & Schentag, 1995). Problems can exist for everyone within the family system. It is not unusual for roles and expectations to change for individuals with a brain injury due to their inability to perform previous family duties (Brooks, 1991). The spouse may assume additional household responsibilities (e.g., individually maintaining an adequate income, caring for the injured spouse and children, managing the household, dealing with health care agencies) (Zeigler, 1987). The patient s condition precludes any awareness or expression of gratitude for the care received or concern for the caregiver s emotional or physical state (Coleman, 1984, p. 16). Individuals with brain injuries may also show resentment, which results from feelings of being parented by their spouses (Zeigler, 1987).

In addition, job performance may be affected. Time required for one s job performance to return to pre-injury level depends upon several factors, including the type and extent of the brain injury (i.e., neurological deficits) and type of work. Individuals whose occupations required a high level of interaction, constant interruptions, and simultaneous projects are likely to take longer to return to their pre-injury performance level. Those who must rely on memory may also encounter difficulties until they find ways to compensate for their post-injury deficits (Englander et al., 1992). Individuals experiencing neurological difficulties are likely to have an increase in their stress level because their employment, work performance, and family and social relationships are often negatively affected. Moreover, stress may be compounded because neurological changes are not always accompanied by physical limitations. Based on the perception of family and friends, their loved one appears to perform in a normal manner. As a result, individuals within the injured person s environment may be unaware of difficulties that the individual with the brain injury is experiencing. Thus, family members and friends may continue to have pre-injury expectations that may ultimately intensify stress for the person with the injury.

Purpose of the Study

The purpose of this study was to examine the stress level, coping strategies, and perceived social support among adults with brain injuries. The number of individuals experiencing brain injuries is increasing yearly. These injuries result in neurological deficits that bring about cognitive, behavioral, emotional, and\or personality changes (Miller, 1986; Moore & Stambrook, 1995) which can be conceptualized as antecedents to other stressors or as stressors individuals experience following their brain injury. As a result of neurological changes, some individuals are unable to function in the same capacity as they did prior to their injury. Therefore, social support and coping strategies are needed to effectively contend with the stress.

Although social support may often reduce stress or enhance individuals well-being, some research has shown that support is good until a threshold point has been reached, particularly with older adults (Kraus, 1987). The threshold point refers to the maximum amount of social support a person can receive without feeling a loss of control. After surpassing this threshold point, an individual feels a low level of control (Kraus, 1987). This precipitates an increase in the level of stress experienced. These results may lead one to question when and to what extent social support is beneficial. While there is an abundance of literature focusing on coping and social support among individuals experiencing different illnesses or injuries (i.e., cancer, rheumatoid arthritis, diabetes) (Felton & Revenson, 1984; Manne & Zautra, 1990; White, Richter, & Fry, 1992), more research is needed to address these issues with individuals experiencing brain injuries. Counseling psychologists are well-suited to assist individuals in coping with various types and levels of stress. However, stress levels experienced by individuals with brain injuries, social support, and coping strategies that help alleviate or intensify their stress are not commonly researched domains of counseling psychologists. An understanding of these issues is important for treatment and to help clinicians understand what precipitates a client s identified problem. For example, impairment to the amygdala from an injury or tumor may cause intense aggression or inappropriate sexual behavior (Valciukas, 1995). Such information is important because it helps a clinician understand that not all behavior exhibited by individuals with brain injuries results from their conscious decisions.

Due to the limited amount of research on stress, coping strategies, and social support among persons with brain injuries, this study has the potential to contribute valuable knowledge to the helping professions as well as society. The results of this research can help bring about a greater level of awareness regarding these variables for adults with brain injuries, as well as help to examine how social support and coping strategies may increase or decrease the stress level of individuals with brain injuries. In addition, the findings may assist family members and employers in understanding how copings strategies and social support impact the stress level among individuals with brain injuries. Consequently, more efforts can be made within the environment to assist all who are involved.

Research Questions and Hypotheses

The present study investigated the following research questions and null hypotheses:

<u>Research Question 1</u>: Does level of perceived social support differ according to stress level among adults with brain injuries?

<u>Null Hypotheses</u>: There will be no statistically significant correlation between level of perceived social support and stress level among adults with brain injuries.

<u>Research Question 2</u>: Do coping strategies among adults with brain injuries differ according to severity of brain injury?

<u>Null Hypotheses</u>: Coping strategies among adults with brain injuries will not differ according to severity of brain injury.

<u>Research Question 3</u>: Do coping strategies among adults with brain injuries differ according to type of brain injury (open or closed)?

<u>Null Hypotheses</u>: Coping strategies among adults with brain injuries will not differ according to type of brain injury (open or closed).

<u>Research Question 4</u>: Do coping strategies among adults with brain injuries differ according to time post brain injury?

<u>Null Hypotheses</u>: Coping strategies among adults with brain injuries will not differ according to time post brain injury.

<u>Research Question 5</u>: Does type of coping strategy affect the stress level among adults with brain injuries?

<u>Null Hypotheses</u>: Coping strategies will not affect the stress level among adults with brain injuries.

Definition of Terms

The following definitions clarify terms used in this study. Each is defined in terms of how it directly pertains to the current study.

<u>Brain injury</u> is an open or closed head wound. Open brain injury involves direct penetration of the brain by an external entity (e.g., gunshot or stab wound to the head).

Closed head injury involves damaging blows to the head that do not penetrate the skull (Miller, 1993).

<u>Mild brain injury</u> involves a wound to the head resulting in a loss of consciousness and memory not exceeding 30 minutes; and after regaining consciousness the Glasgow Coma Scale (GCS) score is 13 to 15, and posttraumatic amnesia does not exceed 24 hours (Raskin & Mateer, 2000).

<u>Severe brain injury</u> involves a wound to the head resulting in a loss of consciousness and memory or posttraumatic amnesia lasting 1 to 7 days; and after regaining consciousness the GCS score is lower than 13 (Stoler & Hill, 1998).

<u>Stress</u> is a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being (Lazarus & Folkman, 1984, p. 19).

<u>Coping</u> is constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person (Lazarus & Folkman, 1984, p. 141).

<u>Coping strategies</u> are specific techniques used by individuals to handle stressful situations (Endler & Parker, 2000). This is the definition used by the Coping with Health Injuries and Problems Scale that was employed in this study.

<u>Social support</u> refers to relationships in which individuals provide needed resources (i.e., money, advice) that result in a person feeling cared for by another person (Cohen & Syme, 1985; Rook, 1987).

Limitations

The scope of this study was limited to adults with brain injuries participating in support groups, conferences, or camps sponsored by the Brain Injury Association of Georgia and the Brain Injury Alliance of South Carolina. Thus, results are not generalizable to all adults with brain injuries.

- 1. Self-report measures utilized for the study were limited to the information that participants were willing to disclose (Nunnally, 1978).
- 2. The effects of social support were not evaluated longitudinally.
- 3. Neurological evaluations were not used to verify participants mental difficulties or level of functioning following their brain injuries.
- 4. There was no control for sex, race, age, or class. In addition, social or cultural factors such as values, norms, or worldviews were not taken into consideration when evaluating results.
- 5. There was no specific information for marital status. It was unknown whether marital status (married, separated, divorced, widow/widower) was pre-injury or post-injury.

Assumptions

Individuals coping strategies and perceived social support will impact their stress level.

- 1. Adults with brain injuries are capable of evaluating their stress levels, coping strategies, and perceived social support.
- Self-report instruments (Index of Clinical Stress, Coping with Health Injuries and Problems Scale, Multidimensional Scale of Perceived Social Support) will accurately measure stress levels, coping strategies, and perceived social support.

CHAPTER 2

LITERATURE REVIEW

The literature review consists of five sections: (a) brain injuries, (b) stress, (c) coping strategies, (d) social support, and (e) stress and coping conceptual framework.

Brain Injuries

Brain injuries can be viewed as a silent or hidden epidemic because some of the difficulties individuals experience following a brain injury cannot be seen. Changes resulting from these injuries depend upon numerous factors, including the location and severity of the injury. When different areas of the brain are damaged, various functions are altered. Because of the comprehensive literature found in the neuropsychology area regarding the brain s functions and changes following brain injuries, only limited information will be presented here on the brain s structures and functions.

The brain consists of three major divisions: forebrain, midbrain, and hindbrain. The forebrain is composed of five principal structures: cerebral cortex, basal ganglia, limbic system, thalamus, and hypothalamus. The two cerebral hemispheres are responsible for sensory and motor activity on opposite sides of the body (Carlson, 1994). The right hemisphere is responsible for sensory and motor activities on the left side of the body; whereas, the left hemisphere is responsible for sensory and motor activities on the right side of the body. Damage to these areas brings about difficulties with these functions.

The cerebral cortex, composed of the frontal, temporal, parietal, and occipital lobes, is responsible for behavioral, cognitive, and personality functions. Damage in the different areas may result in an increase or decrease in specific behaviors. For instance, if Broca s speech area in the frontal lobe is damaged, the result may be Broca s aphasia, making it difficult to communicate. Whereas, if the motorcortex is damaged, difficulties planning and executing movements may result (Carlson, 1994).

The temporal lobe is involved with cognitive functions, emotions, personality, and sexual behavior. Various functions can be affected by temporal lobe damage; some of these changes include interference with auditory, speech, and visual perception; speech production; and sexual or social behavior (Carlson, 1994). Personality changes that are found with damage to the temporal lobe include redundancy in discussing personal problems, a preoccupation with religious or philosophical issues, and verbal explosiveness (Pincus & Tucker, 1985). The function of the parietal lobe involves perception of the senses (e.g., touch, vision, hearing). The occipital region of the brain is responsible for vision. Damage to these areas will result in perception deficits (Carlson, 1994).

The limbic system is composed of the amygdala and the hippocampus. The amygdala is involved with emotional behavior (i.e., aggression, defensiveness, reproduction) (Carlson, 1994). Damage to the amygdala negatively affects one's ability to control emotions. For example, following an injury or a tumor, excessive aggression or inappropriate sexual behavior may result (Valciukas, 1995). Other emotional changes include apathy, depression, irritability, and silliness (Lezak, 1988). The hippocampus is involved with learning and memory; thus, damage to this area negatively affects one s ability to learn and remember (Carlson, 1994).

The thalamus is composed of several nuclei responsible for receiving and relaying sensory information. Sensory information, with the exception of smell, is relayed through the thalamus and sent to appropriate sensory areas in the brain. Damage to the thalamus can result in problems with sensory processing (e.g., difficulty differentiating degrees of heat, cold, wetness, dryness) (Anderson, 1996; Carlson, 1994). The hypothalamus

operates the autonomic nervous system and endocrine system, as well as assists with feeding, fighting, fleeing, and sexual activity (Anderson, 1996; Carlson, 1994).

The midbrain has two principal structures: the tectum and tegmentum. The tectum consists of two structures, the superior colliculi and inferior colliculi. The superior colliculi is involved with hearing; whereas, the inferior colliculi is involved with vision (Carlson, 1994). The hindbrain is composed of three principal structures: the cerebellum, pons, and medulla oblongata. The cerebellum is responsible for motor coordination. Damage to this area may result in difficulty standing or erratic, jerky, and uncoordinated movements; and the person may appear to be inebriated (Anderson, 1996; Carlson, 1994). Many individuals with brain injuries may lack insight regarding their deficits, which is known as posttraumatic insight disorder (Godfrey, Patridge, Knight, & Bishara, 1993). The perception individuals have regarding their neuropsychological symptoms may impact their stress level.

Imagine waking up everyday with a pounding headache, always feeling like you re having trouble concentrating, remembering, and getting your thoughts together, losing your temper and snapping at people for no reason, walking around jumpy and afraid of your own shadow, and on top of that nobody believes you or thinks you re crazy, and maybe you ll understand what I ve been going through since my accident (Miller, 1993, p. 26).

As this quotation indicates, individuals experiencing brain injuries can face numerous changes; the outcome rests on the uniqueness found in each case. Variables such as age, severity of injury, and location of injury all influence recovery. An individual who has experienced a serious brain injury may have an excellent recovery, while another person with a mild injury may have ongoing deficits (Cook, 1987). For example, the individual in the previous quotation did not experience any serious physical injuries or a loss of consciousness. He was hospitalized for one night and discharged with a diagnosis of concussion. What is more alarming is that the quotation was made one year after the brain injury!

Stress

Stress can be categorized in three ways: physical, psychological, and psychosocial (Hafen, Karren, Frandsen, & Smith, 1996). Physical stress may involve aspects of one s environment (i.e., pollution, hurricane, forest fire), as well as one s body (i.e., headaches, surgery, hypoglycemia, irritable bowel syndrome). Individuals with a brain injury may experience physical stress (e.g., nausea, headaches, sleep disturbances, fatigue) in addition to physiological changes that result in stress due to difficulties with attention, concentration, memory, learning, speech, and language (Dixon, Taft, & Hayes, 1993).

Psychological stress results from how individuals perceive their environment and their actions within that environment (Hafen, Karren, Frandsen, & Smith, 1996). For example, if a person with a brain injury perceives himself or herself as being overwhelmed due to environmental situations following his or her recovery, depression, irritability, decreased self-control, and temper outbursts may become evident (Mauss-Clum & Ryan, 1981).

Psychosocial stress results from the dynamics between a person and other individuals and/or social aspects of his or her environment (i.e., family, friends, employer) (Hafen, Karren, Frandsen, & Smith, 1996). Following a brain injury, family roles may be altered. Therefore, having to change one s family role as provider may increase one s stress level. Although care is often needed following the injury, individuals receiving care who remember an equal partnership in their marriage pre-morbidly often show resentment when being parented (Zeigler, 1987, p. 52). Social relationships may be altered due to an inability to engage in activities as previously done.

Research has been conducted evaluating occupational and academic stress experienced by individuals in their daily lives. It seems reasonable to assume that individuals with brain injuries may experience added stress because their neurological deficits bring about limitations that may decrease their performance or make them unable to return to work or school. Not only is it necessary to become reoriented to occupational or academic duties, adjustments must be made due to acquired limitations from the brain injury.

Ip, Dornan, and Schentag (1995) reported that 42% of their participants returned to work or school after experiencing a brain injury; whereas, 58% failed to return. The individuals who returned to work or school were young with a low percentage reporting alcohol abuse. Thirty-three of the participants were employed prior to their injury. After their injury, 12 went back to work, two remained at home, three retired, one went to school, and 15 were unemployed. Twelve participants were in school prior to their injury; after their injury, six remained at home, four returned to school, and two went to work.

Wrightson and Gronwall (1980-1981) conducted a study in which they reported that 60% of their employed participants had neurological symptoms; 46% reported a decrease in their job performance. Englander, Hall, Stimpson, and Chaffin (1992) contacted 125 individuals who had experienced a mild brain injury to evaluate their subjective complaints. Seventy-seven individuals responded; 68 of the participants returned to their former employment or school level. Whereas, nine of the participants did not return to their former level of work or school; one was prevented from returning due to other medical problems; six did not return because of the mild traumatic brain injury; and two had a decrease in work or school hours due to the mild traumatic brain injury.

Changes result from brain injuries; therefore, coping is very important. Research has shown that psychological well-being may be influenced by strategies utilized to cope with stress resulting from an injury or illness (Lazarus & Folkman, 1984).

Coping Strategies

Broadly speaking, coping is a means by which individuals manage stress resulting from internal or external demands that go beyond individuals identified resources (Folkman, 1982). Certain strategies may be employed to cope: emotion-focused or problem-focused (Folkman, 1982; Folkman & Lazarus, 1980). These strategies may be used simultaneously or at different times, depending upon the situation.

Emotion-focused or distractive coping strategies comprise behaviors used to regulate or reduce one s negative feelings and emotional reactions to a stressful situation; however, the problem remains unresolved (e.g., engaging in activities to avoid thoughts about the stressful situation, changing one s perception or meaning of the situation) (Endler & Parker, 2000). Emotion-focused coping strategies are similar to cognitive strategies espoused by Moos and Schaefer (1993), which involve positive reappraisal, acceptance or resignation, and logical analysis. Emotion-focused coping strategies are often used when stressful situations are perceived as being unchangeable and needing to be endured (Folkman & Lazarus, 1980).

Problem-focused or instrumental coping strategies are task-oriented activities used to solve a problem by changing a person s behavior, the situation, or both (Endler & Parker, 2000; Folkman, 1982; Folkman & Lazarus, 1980). Individuals tend to utilize these strategies (i.e., guidance, support, information, problem-solving, positive reappraisal) when their stressful situation appears to be changeable (Folkman & Lazarus, 1980).

Individuals with brain injuries have been found to use a variety of coping strategies. Malia, Powell, and Torode (1995) conducted a study evaluating coping and psychosocial functioning after a brain injury. All of the participants had been admitted to a medical rehabilitation unit. Patients who had brain injuries were matched with patients who were non-neurologically impaired. Results indicated that individuals with brain injuries utilized problem-focused, emotion-focused, avoidance, and wishful thinking as coping strategies. Use of problem-focused coping strategies was found to predict better psychosocial functioning. No difference was found regarding coping strategies used at different times post-injury. Some emotion-focused coping strategies may have a negative impact on individuals (e.g., avoidance, wishful thinking) because individuals focus on running away from or repressing their problems. However, some emotion-focused coping strategies (e.g., positive reappraisal) may positively influence a person s well-being. Coping strategies that involve more self-control and positive reappraisal and less external locus of control have been associated with less affective and physical difficulties (Moore & Stambrook, 1992).

Generally, when individuals with a brain injury use problem-focused coping strategies, they are aware of their problems and attempt to eliminate or manage them (Karlovits & McColl, 1999). The coping strategies of women and men with brain injuries may meet similar needs, but in different ways. The strategies may also differ in terms of how they are prioritized. Willer et al. (1991) found that wives with a brain injury used the following in descending order to cope with stress: (a) spouse and family support, (b) support groups, (c) memory aids, (d) assertiveness and assuming family responsibilities, (e) rehabilitation programs, and (f) spiritual beliefs. On the other hand, husbands with a brain injury were found to utilize the following in descending order to cope with stress: (a) being included in family decisions, (b) understanding the concerns of his family members, (c) involvement in activities outside his home, (d) development of a realistic appraisal of his limitations, (e) and organizational and memory aids. It is interesting to note that the women placed more priority on the use of support from family and groups, as well as spirituality than the men.

In a study by Frank, Haut, Smick, Haut, and Chaney (1990) examining coping strategies of individuals with a closed head injury and their family cohesion, seeking information was the most prominent coping strategy found regardless of time post-injury. In addition, a higher level of family cohesion was found among the group with brain injuries than participants in the control group, which was composed of individuals who had sustained a traumatic injury without a brain injury (Frank et al., 1990).

Social Support

Social support is important when coping with stress. It refers to things provided by individuals that result in feelings of being cared for by others (Cohen & Syme, 1985; Rook, 1987). Some of the dimensions by which social support can be evaluated include: (a) structural versus functional, (b) objective versus subjective, and (c) buffer versus direct effect (Cohen & Wills, 1985). Each of these dimensions will be discussed separately.

The structural component of social support involves the size, frequency, and intensity of support, as well as one s perception regarding the availability of support (Cohen & Wills, 1985). In a longitudinal study by Oxman and Hull (1997) that was conducted to evaluate these variables, the size of the social network prior to surgery was found to have a favorable effect on one s perceived adequacy of support after surgery. In addition, this perception was associated with less depression and limited impairments regarding activities of daily living. The functional component, on the other hand, involves individuals providing needed resources (e.g., tangible aid, emotional support, social companionship) through interpersonal transactions (Cohen & Wills, 1985).

Social support can also be evaluated as objective or subjective in nature (Barrera, 1986). Objective social support refers to actual assistance received (e.g., providing transportation). Subjective social support refers to one s perceptions of the availability of resources when they are needed (Barrera, 1986; Sarason & Sarason, 1985). Findings differ as to which is more salient for one s well-being. According to Cobb (1979), for people to function adequately a certain amount of assistance is needed. Once certain needs are met, it is suggested that the person should function satisfactorily due to feeling highly regarded by others (Caplan, 1981). Therefore, the actual amount of social support may impact individuals perceptions of the quality of their support (Morgan, Patrick, & Charlton, 1984).

Contrary to this view, Krause (1995) regards one s subjective perception of support as being more strongly associated with psychological well-being than the amount

of support received. Perception of social support, conceptualized as an individual s appraisal of being supported versus the actual support received (Lakey & Drew, 1997), has been found by some to be viewed more favorably and importantly than the actual amount of support received when predicting adjustment to stressful life events (Krause, 1995; Rook, 1987; Sarason & Sarason, 1985).

Perception of social support appears to play a significant role in assisting individuals in coping with crises, managing stress, and adapting to change. Individuals who viewed themselves as having a high level of support experienced lower levels of depression and anxiety when compared to their counterparts who perceived themselves to have a low level of support (Cohen, 1988; Cohen & Wills, 1985; Ross et al., 1999). It is interesting to note that individuals who had a high perception of support formulated more favorable attributions for failed support than did individuals with low perceptions of support (Ross et al., 1999).

Social support can also be viewed as having a buffer (moderating) or direct (main, mediating) effect on a person s well-being (Cohen & Wills, 1985; Schwarzer & Leppin, 1989). Both of these conceptualizations are correct in some respects; evidence supports both models. Each represents a different process through which social support may affect well-being. According to Cohen and Wills (1985), coping resources, in particular social support, may work simultaneously and have a buffer or direct effect on persons suffering from chronic illness.

Evidence for a direct-effect model is found when a person is integrated into a social support network (Cohen & Wills, 1985). According to this model, resources (e.g., social support) have a beneficial effect regardless of a person experiencing stress. Therefore, social support is beneficial in the absence of stress. The buffer-effect model is found when certain moderating factors, resources, or social networks help people cope only when they are faced with stress (e.g., illness or injury) (Barrera, 1986; Cohen & Wills, 1985; Sarason & Sarason, 1984, 1985). Therefore, support is viewed as the

buffer against the adverse effect that stress may have on one s health. Some researchers have found that social support obtained specifically from participation in leisure activities with friends or companions buffers the negative effects of stress on physical and mental health (Iso-Ahola & Park, 1996; Larson, Mannell, & Zuzanek, 1986; Rook, 1987).

Social support may be affected by the characteristics or uniqueness of the individual receiving the support. For example, a person having low self-esteem may be dissatisfied with the exchange of social support (Dunkel-Schetter, Folkman, & Lazarus, 1986). Whereas, a person experiencing depression may be more interested in emotional support rather than financial support (Coyne, Aldwin, & Lazarus, 1981). Some investigators (e.g., Revenson, Wollman, & Felton, 1983) have found that social support, which provided tangible or intangible resources, was not significantly associated with psychological adjustment.

Stress and Coping Conceptual Framework

This research is based on the stress and coping model delineated by Lazarus and Folkman (1984). According to this model, coping is a process that occurs between individuals and their environment in which individuals appraise situations (Lazarus & Folkman, 1984). Appraisal is an evaluation process that determines why and to what extent a particular transaction or series of transactions between the person and the environment is stressful (Lazarus & Folkman, 1984, p. 19). According to this framework, stress results from individuals appraising environmental situations as taxing or exceeding available resources, which may alter their sense of well-being. For the purpose of the current study, well-being is viewed as an individual s stress level.

A two-phase appraisal process occurs following a stressor (e.g., automobile accident, brain injury). During phase I, an individual appraises what is at stake. If the individual appraises the situation as causing no harm to self or as having sufficient resources or social support to cope with the situation, the stress level is low. During phase II, individuals appraise whether the stressor poses harm, threat, or challenge. The modified version of the conceptual model of stress and coping (Lazarus & Folkman, 1984) shown in Figure 1 reflects the foundation for the current study. Brain injury is the stressor which all of the participants have experienced. As a result, the participants appraise their situation and utilize social support and coping strategies to manage difficulties resulting from their brain injury and other life stressors. The outcome is an indication of their specific stress level.





Summary

Stress following a brain injury is common. Although things may appear normal for an individual with a brain injury due to his or her good reintegration into society, neurological deficits may exist. Thus, they do not escape adverse psychosocial effects of their injury (Tate, Lulham, Broe, Strettles, & Pfaff, 1989). These effects can include difficulties in maintaining employment, drops in occupational status, increased social isolation, and greater need for emotional support. All of these may be intensified due to neurological difficulties. Yet, things often appear normal. This may explain, at least partially, why insufficient social support is not unusual following a brain injury.

According to Barrera and Baca (1990), having low social support may increase a person s level of stress. High levels of social support have been associated with better emotional adjustment, which is critical for maximum recovery (Florian & Katz, 1991; Godfrey, Patridge, Knight, & Bishara, 1991, 1993; Kinsella, Moran, Ford, & Ponsford, 1988). Because stress results from demands exceeding a person s resources (Lazarus & Folkman, 1984), it is important to examine the relationship between stress levels, coping strategies, and social support among adults with brain injuries.

A review of the literature suggests that individuals who experience stress utilize different types and amounts of social support and coping strategies. However, limited research exists evaluating the relationship between stress level, social support, and coping strategies among adults with brain injuries. This information will be important for counseling psychologists when treating these individuals. Therefore, data gathered from this study can help foster a better understanding of the social support and coping strategies needed by individuals with brain injuries. Due to the increase in this population, information obtained from this study can be used by clinicians to help lower the stress level of adults with brain injuries as a result of being knowledgeable about the saliency of social support and coping strategies that are needed. This research investigated the relationship between stress level, perceived social support, and coping strategies among individuals who have sustained a brain injury.

CHAPTER 3

METHODOLOGY

This chapter provides information on the sample size, sample description, data collection procedures, instrumentation, and data analyses.

Sample Size

The statistical program G-Power (Version 2) (Faul & Erdfelder, 1992) was used to calculate the sample size. A medium effect size (.3), significance criterion (.05), and power ratio of .93 and .80 were used for the Bivariate Correlation and Analysis of Variance (ANOVA) respectively. Based on these numbers, 126 participants were needed for the study.

Sample Description

The sample consisted of 130 participants with brain injuries, 44 females (33.8%) and 86 males (66.2%) who ranged in age from 19 to 72 years old. The marital status of the participants was as follows: 60 single, 37 married, 2 cohabitating, 2 separated, 25 divorced, and 4 widowers. There were 13 African Americans, 105 European Americans, 4 Native Americans/White, 1 Hispanic American, 1 Lebanese, 1 Native American, 1 Native American/Italian, and 1 Native American/Polish/German. Participants educational status included 12 who did not complete high school, 60 with High School Diplomas, 18 with Associate Degrees, 29 with Bachelor s Degrees, 9 with Master s Degrees, and 2 with Technical Certificates.

Data Collection Procedures

Participants were obtained from brain injury support groups, conferences, and camps sponsored by the Brain Injury Association of Georgia and the Brain Injury

Alliance of South Carolina. Facilitators and/or administrators of the brain injury support groups, camps, and conferences were contacted by telephone. The purpose of the study was explained. The group facilitators asked the group members whether they would like to participate in the research. After receiving verbal approval to administer the research packets, the researcher administered the research packets during monthly brain injury support group meetings, a camp, and two conferences. It took approximately 30 to 40 minutes to complete the research packets. The research packet included a cover letter (Appendix A) explaining the nature of the study, anonymity of participation, the process of consent to participate in the study, the Demographic Questionnaire, the Index of Clinical Stress, the Coping with Health Injuries and Problems Scale, and the Multidimensional Scale of Perceived Social Support. The data collection process took six months.

Instrumentation

Demographic Questionnaire

The <u>Demographic Questionnaire</u> (Appendix B) constructed by the researcher has three sections (personal information, career-related information, health-related information). Personal information questions pertain to sex, age, race/ethnicity, years of education, year and type of degree earned, and marital status. It also includes two questions related to participants subjective evaluation of their stress level since being injured and their subjective identification of perceived social support. For example, On a scale from 0 (no stress) to 100 (severe stress), how do you rate your stress level since your brain injury? What type of social support (i.e., significant other, family, friends) have you used since your injury to cope with stress? The employment information section pertains to employment status pre- and post-injury, length of time in position, and post-injury training. The health-related section seeks information regarding current state of health, health state prior to brain injury, and years since injury.

Index of Clinical Stress (ICS)

The Index of Clinical Stress (Hudson, 1997) is a 25-item, 7-point (1 = None of the time, 7 = All of the time) Likert-type scale designed to measure an individual s subjective stress level. It takes approximately 5-10 minutes to complete the inventory. The questions were developed to measure affective states regarding stress. Examples of questions include: I feel like I am stretched to the breaking point. and I feel that I am losing control of my life. Scores can range from 0 to 100 and can be regarded as true ratio scale values. Low scores reflect a low stress level; whereas, high scores reflect a high stress level.

According to Hudson (1997), a clinical cutoff score has not been established for this scale. Thus, for the purpose of this research a score lower than 30 represents no clinical significant stress or a low stress level. A score greater than 70 indicates a high stress level. The internal reliability coefficient for the <u>Index of Clinical Stress</u> for this study was .95. This is similar (.96) to results reported by Abell (1991). The factorial validity of the instrument is good; it was examined by correlating every item with the total score and with the total score of three other instruments (Generalized Contentment Scale, Index of Family Relations, Family Inventory of Life Events and Changes). The <u>Index of Clinical Stress</u> items were correlated more strongly to its full-scale score than the other items used in the evaluation (Abell, 1991). Additionally, the content and construct validity for the ICS are good (Abell, 1991).

Multidimensional Scale of Perceived Social Support (MSPSS)

The <u>Multidimensional Scale of Perceived Social Support</u> (MSPSS) (Zimet, Dahlem, Zimet, & Farley, 1988) is a 12-item, 7-point (1 = very strongly disagree, 7 = very strongly agree) Likert-type scale designed to assess one s perception of three sources of social support (family, friends, significant other). It takes approximately 3 - 5 minutes to complete the inventory. Each source of social support constitutes a subscale of the instrument consisting of four questions per scale. The questions were developed to measure how individuals perceive their social support. For example questions include,

There is a special person who is around when I am in need I can count on my friends when things go wrong and My family is willing to help me make decisions.

Studies have demonstrated that the MSPSS is psychometrically sound (Dahlem, Zimet, & Walker, 1991, p. 756; Kazarian & McCabe, 1991; Zimet, et al., 1988; Zimet, Powell, Farley, Werkman, & Berkoff, 1990). The total internal reliability coefficient for the <u>Multidimensional Scale of Perceived Social Support</u> for the current study was .86 for the total scale; and .89, .89, and .82 for Friends, Family, and Significant Other subscales, respectively. These internal reliability coefficients are consistent with previous findings .88 for the total scale; and .91, .87, and .85 for Significant Other, Family, and Friends subscales, respectively (Dahlem, Zimet, & Walker, 1991; Kazarian & McCabe, 1991; Zimet, et al., 1988; Zimet, et al., 1990). The authors also report good test-retest reliability of .85, as well as moderate construct validity and good factorial validity (Kazarian & McCabe, 1991).

Coping with Health Injuries and Problems (CHIP) Scale

The <u>Coping with Health Injuries and Problems Scale</u> (CHIP) (Endler & Parker, 2000) is a 32-item, 5-point (1 = not at all, 5 = very much) Likert scale for individuals 18 years of age and older. The instrument was developed to measure four types of strategies (Distraction, Palliative, Instrumental, Emotional-preoccupation) used to cope with stress that results from health problems and illness. Each strategy consists of eight questions. It takes approximately 5-10 minutes to complete the inventory. However, if reading skills are below an 8th grade level, more time may be needed.

Distraction (D) coping strategies are cognitive and behavioral efforts (i.e., engaging in unrelated health activities) used to avoid having a preoccupation with the health problem. Make plans for the future is an example of a distraction coping strategy. Palliative (P) coping strategies are self-help activities used to diminish stress resulting from an illness. An example of a palliative coping strategy is Lie down when I feel tired. Instrumental (I) coping strategies are problem-focused or task-oriented strategies used to deal with an illness (e.g., learning more about the illness or obtaining needed medical assistance). For example, Concentrate more on how my body works indicates an instrumental coping strategy. Emotional preoccupation (EP) strategies are emotion-focused activities (i.e., self-preoccupation, fantasizing) in which an individual focuses on the emotional consequences of the health problem. For example, Wish that the problem had never happened is an emotional-preoccupation strategy.

Table 3-1 presents the internal reliability information as measured by Cronbach s alpha (Endler & Parker, 2000). The lower alpha coefficients for men and women 50 years old or older on the Palliative coping strategy may reflect a decline in the utilization of this coping strategy as individuals increase in age. The reliability coefficients are presented based on age and sex. Table 3-2 provides test-retest reliability information (Endler, Courbasson, & Fillion, 1998). In addition, the authors report good construct validity and good factorial validity (Endler & Parker, 2000). Total internal reliability coefficients as measured by Cronbach s alphas for the <u>Coping with Health Injuries and Problems</u> for this study was .78 for the total score; and .77, .61, .77, and .85 for Palliative, Instrumental, Distraction, and Emotional subscales respectively. Some of these coefficients are lower and less consistent than previous findings, which ranged from .65 to .84 (Endler & Parker, 2000).

Data Analyses

The Statistical Package for the Social Sciences (SPSS) was used to analyze the data for this study. Descriptive statistics (i.e., means, standard deviations) were utilized to evaluate demographic information of the participants. Specific demographic variables that were examined include the following: age, sex, marital status, employment status prior to injury, and current employment status.

<u>Research Question 1</u>: Does level of perceived social support differ according to stress level among adults with brain injuries?

Table 3-1

		18-29 years	30-49 year	50 years+	
Femal	les				
	Distraction	.76	.78	.70	
	Palliative	.81	.79	.65	
	Instrumental	.82	.82	.73	
	Emotional Preoccupation	.84	.83	.84	
Males	5				
	Distraction	.79	.80	.80	
	Palliative	.81	.82	.66	
	Instrumental	.82	.83	.80	
	Emotional Preoccupation	.83	.84	.82	

Internal Reliability Coefficients for the CHIP Subscales (by Age and Sex)
Table 3-2

Test-Retest Reliability Coefficients (Two Weeks) for the CHIP Subscales

CHIP Subscales	Male	Female
Distraction	.85*	.82*
Palliative	.76*	.64*
Instrumental	.79*	.64*
Emotional Preoccupation	.75*	.78*

* p < .05

<u>Research Question 2</u>: Do coping strategies among adults with brain injuries differ according to severity of brain injury?

<u>Research Question 3</u>: Do coping strategies among adults with brain injuries differ according to type of brain injury (open or closed)?

<u>Research Question 4</u>: Do coping strategies among adults with brain injuries differ according to time post brain injury?

<u>Research Question 5</u>: Does type of coping strategy affect the stress level among adults with brain injuries?

The data analyses consisted of bivariate correlations, a t-test, and an ANOVA. Bivariate correlations were used to evaluate relationships (Research Questions 1 - 5) between perceived social support and stress level, coping strategies and severity of brain injury, coping strategies and type of brain injury (open or closed), coping strategies and time post injury, and coping strategies and stress level among adults with brain injuries. An ANOVA was also used to evaluate group differences based on severity of brain injury and coping strategies (Research Question 2). The dependent variable was coping strategy; the independent variable was severity of brain injury (mild, moderate, severe). In addition, a t-test was also used (Research Question 3) to evaluate whether coping strategies differed according to type of brain injury (open or closed). The dependent variable was coping strategies; the independent variable was type of brain injury.

CHAPTER 4

RESULTS

Results of the data obtained in this study are presented in two sections: (a) descriptive statistics and (b) detailed information on the data analyses.

Descriptive Statistics

Descriptive statistics (i.e., means, standard deviations, frequencies, percentages) were computed to evaluate demographic information of the participants. Table 4-1 presents the means and standard deviations for age and time post injury. Table 4-2 presents the frequencies and percentages for current state of health and state of health prior to the brain injury. Table 4-3 presents employment status pre- and post-brain injury. Table 4-4 reports the descriptive statistics for the MSPSS, ICS, and CHIP.

Findings Related to Research Questions

Research Question 1: Does level of perceived social support differ according to stress level among adults with brain injuries?

To investigate whether level of perceived social support differed according to stress level among adults with brain injuries, a bivariate correlation was conducted.

<u>Null Hypothesis</u>: There will be no statistically significant correlation between level of perceived social support and stress level among adults with brain injuries.

This null hypothesis was rejected. Results indicated statistically significant negative correlations between stress level and overall perception of perceived social support ($\underline{r} = -.25$, $\underline{p} < .01$) as well as stress level and level of perceived social support from significant other ($\underline{r} = -.29$, $\underline{p} < .01$) (Table 4-5). There were no other statistically significant correlations found. This suggests that when individuals have a high stress

Age and Time Post Injury

	<u>n</u>	<u>M</u>	<u>SD</u>	<u>Minimum</u>	<u>Maximum</u>	Range
Age (years)	129	40.18	11.37	19	72	53
Time (months)	129	144.84	126.41	3	600	597

Health Status Pre and Post Injury

	Pre-In	jury	Post-Injury		
	Frequency	Percent	Frequency	Percent	
Excellent	72	55.4	32	24.6	
Good	40	30.8	62	47.7	
Fair	14	10.8	33	25.4	
Poor	1	.8	1	.8	
Missing	1	2.3	2	1.5	

Employment Status Pre and Post Brain Injury

	Pre-In	jury	Post-I	njury	
	Frequency	Percent	Frequency	Percent	
Employed	100	76.9	60	46.2	
Full Time	79	60.8	31	23.8	
Part Time	21	16.2	29	22.3	
Unemployed	30	23.1	69	53.1	
Missing			1	.8	

Descriptive Statistics for the Multidimensional Scale of Perceived Social Support (MSPSS), Index of Clinical Stress (ICS), and Coping with Health Injuries and Problems (CHIP) Scale

	<u>n</u>	<u>M</u>	<u>SD</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Range</u>
MSPSS						
Family (Fa)	129	5.47	1.45	1.00	7.00	6.00
Friends (Fr)	129	4.69	1.58	1.00	7.00	6.00
Significant Other (SO)	129	5.37	1.45	1.00	7.00	6.00
Total Scale (T)	129	5.16	1.34	1.00	7.25	6.25
ICS	130	33.59	20.17	1.33	100.00	98.67
CHIP Subscales						
Distraction	130	62.06	13.62	20	90	70
Palliative	130	52.06	11.57	26	83	57
Instrumental	130	54.17	12.26	15	78	63
Emotional	130	57.96	15.85	24	90	66

Correlation Matrix for MSPSS and ICS

	Family	Friends	Sig. Other	Total	ICS
Family					
Corr.	1.00				
Sig.					
Friends					
Corr.	.17	1.00			
Sig.	.05				
Signif. Other					
Corr.	.42**	.37**	1.00		
Sig.	.00	.00			
MSPSS Total					
Corr.	.66**	.70**	.79**	1.00	
Sig.	.00	.00	.00		
ICS					
Corr.	08	14	29**	25**	1.00
Sig.	.37	.11	.00	.00	

**Correlation is significant at the .05 level (2-tailed).

level (ICS \geq 70) they have a lower overall perception of perceived social support, especially from significant other. On the other hand, when individuals experience a low stress level (ICS \leq 30), they have a higher overall perception of social support, especially from a significant other.

Research Question 2: Do coping strategies among adults with brain injuries differ according to severity of brain injury?

To investigate whether coping strategies of adults with brain injuries differ according to severity of brain injury an ANOVA was conducted to examine the three levels of brain injury (mild, moderate, and severe).

<u>Null Hypothesis</u>: Coping strategies among adults with brain injuries will not differ according to severity of brain injury.

The results did not indicate a statistically significant difference between distraction ($\underline{F}(2,127) = .10; \underline{p} = .90$), palliative ($\underline{F}(2,127) = .69; \underline{p} = .50$), instrumental ($\underline{F}(2,127) = .61; \underline{p} = .55$), or emotional ($\underline{F}(2,127) = .76; \underline{p} = .47$) coping strategies of adults with brain injuries and severity of the brain injury (Table 4-6).

In addition, a bivariate correlation was conducted. The results did not detect a statistically significant correlation between distraction ($\underline{r} = .03$, $\underline{p} = .72$), palliative ($\underline{r} = .07$, $\underline{p} = .41$), instrumental ($\underline{r} = .10$, $\underline{p} = .28$), or emotional ($\underline{r} = .10$, $\underline{p} = .26$) coping strategies of adults with brain injuries and severity of the brain injury (Table 4-7).

This null hypothesis was not rejected. Regardless of the level of injury, there was no significant difference regarding the type of coping strategies utilized (Table 4-8).

<u>Research Question 3: Do coping strategies among adults with brain injuries differ</u> according to type of brain injury (open or closed)?

To investigate whether coping strategies of adults with brain injuries differ according to type of brain injury (open or closed) an independent sample t-test was conducted.

Source	df	SS	MS	F	Sig.
Distraction					
Between Group	2	38.53	19.27	.10	.90
Within	127	23876.98	188.01		
Total	129	23915.51			
Palliative					
Between Group	2	185.34	92.67	.69	.50
Within	127	17094.17	134.60		
Total	129	17279.51			
Instrumental					
Between Group	2	183.09	91.55	.61	.55
Within	127	19205.18	151.22		
Total	129	19388.28			
Emotional Preoccupation					
Between Group	2	381.33	190.66	.76	.47
Within	127	32041.48	252.30		
Total	129	32422.81			

ANOVA Table Evaluating Coping Strategies and Severity of Brain Injury

Correlation Matrix for CHIP Scale and Severity of Brain Injury

	Distraction	Palliative	Instrumental	Emotion	Injury Level
Distraction					
Corr.	1.00				
Sig.					
Palliative					
Corr.	.05	1.00			
Sig.	.55				
Instrumental					
Corr.	.24**	.22*	1.00		
Sig.	.01	.01			
Emotional Pr	reoccupation				
Corr.	06	.27**	.18*	1.00	
Sig.	.51	.00	.00		
Injury Level					
Corr.	.03	07	.10	10	1.00
Sig.	.72	.41	.28	.25	

**Correlation is significant at the .01 level (2-tailed).

*Correlation is significant at the .05 level (2-tailed).

Descriptive Statistics for CHIP Scale and Severity of Brain Injury

CHIP Subscales	<u>n</u>	<u>M</u>	<u>SD</u>	<u>Minimum</u>	<u>Maximum</u>	Range
Distraction (Total)	130	62.06	13.62	20	90	70
Mild	14	60.50	14.93	35	84	49
Moderate	23	62.35	13.35	20	82	62
Severe	93	62.23	13.62	26	90	64
Palliative (Total)	130	52.06	11.57	26	83	57
Mild	14	52.71	9.67	41	74	33
Moderate	23	54.48	11.70	37	76	39
Severe	93	51.37	11.83	26	83	57
Instrumental (Total)	130	54.17	12.26	15	78	63
Mild	14	51.07	15.15	15	73	58
Moderate	23	53.48	11.44	30	77	47
Severe	93	54.81	12.04	25	78	53
Emotional Preoccupation (Total)	130	57.96	15.85	24	90	66
Mild	14	62.79	17.72	34	90	56
Moderate	23	58.13	16.66	30	87	57
Severe	93	57.60	15.41	24	89	65

<u>Null Hypothesis</u>: Coping strategies among adults with brain injuries will not differ according to type of brain injury (open or closed).

This null hypothesis was not rejected. Results did not indicate a statistically significant difference between distraction ($\underline{t} = .92$; $\underline{p} = .36$), palliative ($\underline{t} = .33$; $\underline{p} = .74$), instrumental ($\underline{t} = .84$; $\underline{p} = .40$), or emotional ($\underline{t} = -1.41$; $\underline{p} = .15$) coping strategies of adults with brain injuries and type of the brain injury (open or closed). In addition, a bivariate correlation was conducted. The results did not detect a statistically significant correlation between distraction ($\underline{r} = .08$, $\underline{p} = .36$), palliative ($\underline{r} = .03$, $\underline{p} = .74$), instrumental ($\underline{r} = .07$, $\underline{p} = .40$), or emotional ($\underline{r} = .13$, $\underline{p} = .15$) coping strategies of adults with brain injuries and type of brain injury (Table 4-9).

Research Question 4: Do coping strategies among adults with brain injuries differ according to time post brain injury?

To investigate whether coping strategies of adults with brain injuries differ according to time post injury categorized in terms of months, a bivariate correlation was conducted.

<u>Null Hypothesis</u>: Coping strategies among adults with brain injuries will not differ according to time post brain injury.

This null hypothesis was not rejected. The results of the bivariate correlation did not indicate a statistically significant correlation between distraction ($\underline{r} = .03$, $\underline{p} = .73$), palliative ($\underline{r} = .08$, $\underline{p} = .38$), instrumental ($\underline{r} = -.14$, $\underline{p} = .12$), or emotional ($\underline{r} = -.10$, $\underline{p} = .27$) coping strategies of adults with brain injuries and time post injury (Table 4-10).

<u>Research Question 5: Does type of coping strategy affect the stress level among</u> <u>adults with brain injuries?</u>

To investigate whether type of coping strategy affects the stress level among adults with brain injuries a bivariate correlation was conducted.

<u>Null Hypothesis</u>: Coping strategies will not affect the stress level among adults with brain injuries.

Descriptive	Statistics	for CHIP	Scale and	Type of	Brain Inj	ury
-				• 1	•	

BI Type	<u>n</u>	<u>M</u>	<u>SD</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Range</u>
Open	28	64.32	13.87	26	90	64
Closed	100	61.56	13.45	20	90	70
Open	28	52.57	10.43	28	74	46
Closed	100	51.75	11.85	26	83	57
Open	28	55.86	11.47	32	78	46
Closed	100	53.64	12.53	15	78	63
Open	28	54.00	13.04	28	76	48
Closed	100	58.80	16.32	24	90	66
	BI Type Open Closed Open Closed Open Closed	BI Туре <u>n</u> Open 28 Closed 100 Open 28 Closed 100 Open 28 Closed 100 Open 28 Open </td <td>BI Type n M Open 28 64.32 Closed 100 61.56 Open 28 52.57 Closed 100 51.75 Open 28 55.86 Closed 100 53.64 Open 28 54.00 Closed 100 58.80</td> <td>BI TypenMSDOpen2864.3213.87Closed10061.5613.45Open2852.5710.43Closed10051.7511.85Open2855.8611.47Closed10053.6412.53Open2854.0013.04Closed10058.8016.32</td> <td>BI TypenMSDMinimumOpen2864.3213.8726Closed10061.5613.4520Open2852.5710.4328Closed10051.7511.8526Open2855.8611.4732Closed10053.6412.5315Open2854.0013.0428Closed10058.8016.3224</td> <td>BI TypenMSDMinimumMaximumOpen2864.3213.872690Closed10061.5613.452090Open2852.5710.432874Closed10051.7511.852683Open2855.8611.473278Closed10053.6412.531578Open2854.0013.042876Closed10058.8016.322490</td>	BI Type n M Open 28 64.32 Closed 100 61.56 Open 28 52.57 Closed 100 51.75 Open 28 55.86 Closed 100 53.64 Open 28 54.00 Closed 100 58.80	BI TypenMSDOpen2864.3213.87Closed10061.5613.45Open2852.5710.43Closed10051.7511.85Open2855.8611.47Closed10053.6412.53Open2854.0013.04Closed10058.8016.32	BI TypenMSDMinimumOpen2864.3213.8726Closed10061.5613.4520Open2852.5710.4328Closed10051.7511.8526Open2855.8611.4732Closed10053.6412.5315Open2854.0013.0428Closed10058.8016.3224	BI TypenMSDMinimumMaximumOpen2864.3213.872690Closed10061.5613.452090Open2852.5710.432874Closed10051.7511.852683Open2855.8611.473278Closed10053.6412.531578Open2854.0013.042876Closed10058.8016.322490

Correlation Matrix for CHIP Scale and Time Post Injury

	Distraction	Palliative	Instrumental	Emotional Preoccupation	Time Post
Distraction					
Corr.	1.00				
Sig.					
Palliative					
Corr.	.05	1.00			
Sig.	.55				
Instrumenta	ıl				
Corr.	.24**	.22*	1.00		
Sig.	.01	.01			
Emotional l	Preoccupation				
Corr.	06	.27**	.18*	1.00	
Sig.	.51	.00	.05		
Time Post					
Corr.	.03	08	.14	10** 1.	00
Sig.	.73	.38	.12	.27	

**Correlation is significant at the .01 level (2-tailed).

*Correlation is significant at the .05 level (2-tailed).

This null hypothesis was rejected. The results indicated a statistically significant negative correlation between distraction coping strategies and stress level ($\mathbf{r} = -.22$; $\mathbf{p} < .01$) and a statistically significant positive correlation between emotional coping strategies and stress level ($\mathbf{r} = .53$; $\mathbf{p} < .01$) among adults with brain injuries (Table 4-11). Statistically significant correlations were not found for palliative ($\mathbf{r} = .06$; $\mathbf{p} = .50$) or instrumental ($\mathbf{r} = .04$; $\mathbf{p} = .65$) coping strategies. The negative correlation between distraction coping strategies and stress level among adults with brain injuries suggests that when individuals increase their usage of distraction coping strategies their stress level decreases. Whereas, when individuals decrease their usage of distraction coping strategies and stress level suggests that when individuals increases. The positive correlation between emotional coping strategies and stress level suggests that when individuals increases their usage of distraction coping strategies and stress level suggests that when individuals increases. On the other hand, when they decrease their usage of poor emotional coping strategies their stress level decreases.

Correlation Matrix for CHIP Scale and ICS

	Distraction	Palliative	Instrumental	Emotional Preoccupation	ICS
Distraction					
Corr.	1.00				
Sig.					
Palliative					
Corr.	.05	1.00			
Sig.	.55				
Instrument	al				
Corr.	.24**	.23**	1.00		
Sig.	.01	.01			
Emotional	Preoccupation				
Corr.	06	.27**	.18*	1.00	
Sig.	.51	.00	.05		
ICS					
Corr.	22**	.06	.04	.53**	1.00
Sig.	.01	.50	.65	.00	

**Correlation is significant at the .01 level (2-tailed).

*Correlation is significant at the .05 level (2-tailed).

CHAPTER 5

DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS

The following chapter provides a discussion of the study s results, implications of the findings, and recommendations for future research.

The number of individuals experiencing brain injuries increases daily. As a result of these injuries, various aspects of a person s life may change; and often stress is inevitable. Various strategies and social supports are utilized to cope with stress. The purpose of this study was to examine the stress level, coping strategies, and perceived social support among adults with brain injuries. There were 130 research participants (86 men and 44 women), ranging in age from 19 to 72. Participants were obtained from support groups, conferences, and camps sponsored by the Brain Injury Association of Georgia and the Brain Injury Alliance of South Carolina. The time post injury for participants ranged from 3 to 600 months. Bivariate correlations, a t-test, and an ANOVA were used to investigate the research questions of this study.

Social support is important when coping with stress. It refers to things provided by individuals that result in feelings of being cared for by others (Cohen & Syme, 1985; Rook, 1987). Subjective social support refers to one s perceptions of the availability of resources when they are needed (Barrera, 1986; Sarason & Sarason, 1985). Perception of social support appears to play a significant role in assisting individuals in coping with crises, managing stress, and adapting to change, all of which are expected following a brain injury.

A statistically significant negative correlation was found between stress level and overall perception of social support, as well as between stress level and perceived social support from a significant other. This would suggest when individuals have a high overall perception of social support, particularly from a significant other, they experience lower stress levels; and as this perception decreases, their stress level increases. While perception of social support from significant other was found to be significant, the exact nature of the relationship cannot be determined. Significant other may represent a spouse, partner, close friend, or family member. In view of the fact that only 37 of the 130 participants were married, significant other represents a host of relationships. Therefore, more information is needed regarding how the participants defined significant other.

On the Demographic Questionnaire, participants were able to identify several types of social support they used to cope with stress since their brain injury. Interestingly, only 31 (23. 8 %) participants identified significant other. Whereas, 94 (72.3%) identified family, 75 (57.7 %) identified friends, 73 (56.2 %) identified support group, and 55 (42.3%) identified counseling as being the type of social support used since their brain injury to cope with stress.

Although perceived social support from family and friends were not found to be statistically significant, they were identified as the first and second choices of social support. An explanation for these variables not being statistically significant could be due to the amount of effort and energy one has to put forth to establish relationships with friends; whereas, a relationship or connection with family members normally exists without much effort, and the quality of the relationship would be established based on interactions of the family members.

Characteristics or intrapersonal issues (i.e., self-esteem, depression) may contribute to perceptions individuals have regarding their social support. For example, individuals having high self-esteem have a high perception of social support. Whereas, individuals having low self-esteem have a low perception of social support and may be dissatisfied with the exchange of social support (Dunkel-Schetter, Folkman, & Lazarus, 1986). Although self-esteem appears to have a positive relationship with perception of

45

social support, depression has a negative relationship. As individuals level of depression increase their perception of social support decreases and vice versa.

Findings of the current study are similar to previous studies in which a person s perception of social support was found to be more favorable than the amount of support received when predicting adjustment to stressful life events (Krause, 1995; Rook, 1987; Sarason & Sarason, 1985). Individuals who had high levels of perceived social support experienced lower levels of depression and anxiety in comparison to their counterparts perceiving themselves to have low levels of social support (Cohen, 1988; Cohen & Wills, 1985; Ross, Lutz, & Lakey, 1999). Individuals who had a high perception of support formulated more favorable attributions for failed support than did individuals with low perceptions of support (Ross et al., 1999). This demonstrates the role that perception of social support has on individuals stress level or sense of well-being.

In addition to perception of social support, research has shown that psychological well-being may be influenced by strategies utilized to cope with stress resulting from an injury or illness (Lazarus & Folkman, 1984). Coping is a means by which individuals manage stress resulting from internal or external demands that go beyond their identified resources (Folkman, 1982). Various strategies may be used to cope: distraction, emotion-focused, instrumental, palliative, or problem-focused (Endler & Parker, 2000, Folkman, 1982; Folkman & Lazarus, 1980). Strategies may be used simultaneously or at different times, depending upon the situation.

Although participants in the current study used emotional preoccupation, distraction, instrumental, and palliative coping strategies, a statistically significant correlation was found between distraction and emotional preoccupation coping strategies and stress level. The negative correlation between distraction coping strategies and stress level suggests as individuals increase their usage of distraction coping strategies their stress level decreases. Whereas, when they decrease their usage of distraction coping strategies their stress level increases. The positive correlation between emotional preoccupation coping strategies and stress level suggests that as individuals increase their use of emotional preoccupation coping strategies their stress level increases. Whereas, when they decrease their use of emotional preoccupation coping strategies their stress level decreases.

In a meta-analysis conducted by Suls and Fletcher (1985) avoidant or distraction coping strategies were found to be effective in reducing stress. However, this was found to be true initially for short periods of time. According to Lazarus (1993), these strategies may have a positive effect on individuals when they have insufficient instrumental or problem-focused coping strategies early in their stage of coping.

In the current study, findings differed from a previous study on the issue of coping strategies. Malia, Powell, and Torode (1995) evaluated coping and psychosocial functioning after a brain injury and found that avoidance, emotion-focused and problemfocused, and wishful thinking were all used. However, the use of problem-focused coping strategies predicted better psychosocial functioning. These differences could be due to instrumentation or comparing the outcome based on the strategies used.

Emotion-focused, avoidance, or distractive coping strategies comprise behaviors used to regulate, avoid, or reduce one s negative feelings and emotional reactions to stressful situations; they are often used when stressful situations are perceived as being unchangeable and needing to be endured (e.g., engaging in activities to avoid thoughts about the stressful situation, changing one s perception or meaning of the situation) (Endler & Parker, 2000; Folkman & Lazarus, 1980). The use of avoidance and distractive coping strategies by the participants of the current study is understandable; their brain injuries are unchangeable and need to be endured.

Findings of the current study partially support findings from a previous study. In a study by Willer et al. (1991) women and men with brain injuries were found to cope with stress in different ways, and the strategies were prioritized differently. Wives with brain injuries used spouse and family support more frequently than husbands with brain injuries

to cope with stress. Husbands with brain injuries used participation in family decisions to cope with stress. In previous studies, it appears that women and men both use their family to cope with stress, but in different ways. In the current study, women and men both placed priority on social support from their significant other.

When evaluating the use of coping strategies and time post brain injury, the findings of the current study were similar to a previous study (Malia, Powell, & Torode, 1995). No statistically significant differences were found between coping strategies of adults with brain injuries and time post injury. However, these findings contradict a study by Frank, Haut, Smick, Haut, and Chaney (1990) examining coping strategies of individuals with closed head injuries and family cohesion in which seeking information was the most prominent coping strategy regardless of time post-injury. Problem-focused (i.e., seeking information) or instrumental coping strategies are task-oriented activities used to solve a problem by changing a person s behavior, the situation, or both (Endler & Parker, 2000; Folkman, 1982; Folkman & Lazarus, 1980). Individuals tend to utilize these strategies (i.e., guidance, support, information, problem-solving, positive reappraisal) when their stressful situation appears to be changeable (Folkman & Lazarus, 1980).

No statistically significant difference was found between coping strategies of adults with brain injuries and severity of brain injury in the current study. It appears individuals with mild, moderate, or severe brain injuries use distraction, palliative, instrumental, and emotional preoccupation coping strategies. Although they use similar coping strategies, they may use them for different reasons. For example, individuals with mild brain injuries may use distraction while having an awareness that they are not choosing to focus on their injury. On the other hand, individuals with severe brain injuries may not be aware that they are distracting themselves as a coping strategy.

In the current study, no statistically significant difference was found between coping strategies of adults with brain injuries and type of brain injury (open or closed).

Findings from a previous study differ from the current study s findings. Previous findings indicate, individuals with closed head injuries used more information seeking or instrumental coping strategies than a control group consisting of individuals with traumatic injuries without a brain injury (Frank et. al., 1990). It was suggested that seeking information was a way to cope with memory deficits, as well as an attempt to compensate for the injury (Frank et. al., 1990).

Findings from various studies may differ. This may be due to differences in instrumentation, experimental versus non-experimental research design, level of injury, and sample selection procedures.

Implications

Counseling psychologists are well-suited to assist individuals in coping with stress. However, stress levels experienced by individuals with brain injuries, social support, and coping strategies that help alleviate or intensify their stress are not commonly researched domains of counseling psychology. An understanding of these issues is important to help clinicians understand what precipitates a client s identified problem.

Following a brain injury, it is not uncommon for various aspects of individuals lives to change. Neurological deficits may cause a decrease in functioning resulting in a loss of autonomy, unemployment or a change to a less taxing job, as well as an inability to adequately fulfill family roles. It is important when providing services to these individuals that neurological evaluations are completed in order to have an understanding of their level of injury, type of injury, and limitations due to their neurological deficits. After obtaining this information, evaluating their perception of social support and coping strategies are essential to cope with the stress they may be experiencing.

Although the limitations individuals with brain injuries may experience increase their stress level, having a high perception of social support, particularly from a significant other, can lower their stress level. Therefore, involving significant others in treatment is imperative to educate them regarding the neurological deficits, possible limitations, and impact stress has on recovery. Significant other may be defined in many ways: spouse, partner, family member, friend, etc. A limitation in the current study involved not having participants identify their significant other. Future research in which participants identify their relationship with the significant other would be very beneficial.

The role of the brain injury support group or time in the group was not taken into consideration when evaluating social support. A future study evaluating the role of support groups on stress with a control group of individuals with brain injuries who have not participated in them would be very beneficial. This information would assist psychologists in making recommendations for treatment.

Assessing cognitive appraisal of situations is also important; negative cognitive appraisals of stressors can lower the perception of social support resulting in an increased stress level.

It is imperative for psychologists to know the level of brain injury. First, while individuals with different levels of brain injury may use similar coping strategies, they may do so for different reasons. For example, individuals with mild brain injuries may consciously use distraction coping strategies. Individuals with severe brain injuries may use them without being aware that they are distracting themselves from stressful situations. Second, depending on the severity of the injury individuals may not be aware of their deficits; this may result in added stress due to an inability to understand why, for example, employment changes are transpiring. Third, although similar goals may be sought, the type of intervention may differ due to the level of injury. For example, based on the level of injury different types of therapeutic interventions may be warranted due to memory difficulties. Though level of injury was evaluated in the current study, a limitation involved not evaluating the individuals ability to function. Future research evaluating functionality of individuals with brain injuries and their coping strategies would be relevant. Level of injury does not denote functionality. For example, an individual may experience a severe brain injury and function at a high level. Whereas, another individual may experience a mild brain injury and function at a much lower level.

It is important for psychologists to know time post injury and evaluate the type of coping strategies used at different times post injury. Although distraction and avoidant strategies may be beneficial for a short period of time, stress may be heightened if these strategies are used over a long period of time. A longitudinal study evaluating stress level and coping strategies utilized at different times post injury would be beneficial to evaluate. The results could indicate whether certain coping strategies are consistently used or change at different times post injury and how they impact individuals stress level. This information would assist psychologists in providing services to assist individuals with brain injuries in therapy.

The results of this research help bring about a greater level of awareness regarding the relationship between stress level, coping strategies, and perception of social support. In addition, the findings may assist family members and employers in understanding some of the dynamics that impact the stress level among individuals with brain injuries. Consequently, more efforts can be made within the environment to assist all who are involved.

Research Recommendations

- The current study only examined participants in support groups, conferences, and camps. A similar study involving a random sample and a control group could increase the study s generalizability.
- The current study did not control for sex, race, age, class, social factors, or cultural factors (e.g., values, norms, or worldviews). A similar study controlling for sex, race, age, class, and cultural factors would allow for greater generalization.
- 3. A longitudinal study evaluating stress, coping strategies, and perceived social support and how these dynamics change over time would be very beneficial.

- 4. The current study did not assess neurological evaluations to discern similarities and/or differences between individuals with particular types of brain injuries. A similar study involving neurological evaluations would be beneficial to discern similarities and differences between individuals with particular types of brain injuries.
- The current study was quantitative. A qualitative research study could add richness of the participants stories regarding their stress level, coping strategies, and perceived social support.
- 6. The current study did not evaluate participants characteristics (e.g., how their characteristics could impact perceptions of social support). A similar study evaluating how perception of social support may be affected by individual characteristics could add additional information for the therapeutic process. For example, a person experiencing depression may be more interested in emotional support rather than financial support (Coyne, Aldwin, & Lazarus, 1981). The importance of perception and type of social support needed may differ, which could change the type of community referrals recommended and the dynamics of therapy.
- 7. The current study did not evaluate marital status. A similar study evaluating marital status and its impact on stress level and coping could assist clinicians in therapy. Information on participants marital status pre- and post-brain injury could provide additional knowledge also.
- 8. The role of the brain injury support group or time in the group was not taken into consideration when evaluating social support. A future study evaluating the role of support groups on stress with a control group of individuals with brain injuries who have not participated in them would be very beneficial. This information would assist psychologists in making recommendations for treatment.

Conclusions

This study evaluated the relationship between stress level, coping strategies, and perceived social support among adults with brain injuries. The difficulties following brain

injuries are well documented, and stress is not uncommon. This research indicates the importance of the perception of social support and coping strategies on individuals stress level. Thus, it is important for psychologists to address these issues when treating adults with brain injuries.

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APPENDIX A LETTER TO PARTICIPANTS

Letter to Participants

Dear Sir\Madame:

I am engaging in research that examines the relationship between stress level, coping strategies, and social support among adults with brain injuries under the supervision of Dr. Rosemary Phelps. You are being asked to participate in this research to help psychologists have a better understanding of these factors in the lives of adults with brain injuries. Your participation in this research will involve no physical, psychological, social, or legal risks.

Your participation is voluntary and anonymous. You can withdraw your consent before completing the packet of instruments, which should take approximately 30 to 40 minutes to complete. You have given your consent to participate when you complete and return the packet of instruments. All of your responses will be anonymous. You are not to identify your name, address, telephone number, or social security number on any instruments to ensure anonymity.

Research at The University of Georgia involving human participants is overseen by the Institutional Review Board. Question or problems regarding these activities should be addressed to Institutional Review Board; Office of V. P. for Research, The University of Georgia; 606A Graduate Studies Research Center; Athens, Georgia, 30602-7411; Telephone number (706) 542-5941.

I will genuinely appreciate your participation in this research project.

Sincerely,

Debbie Gideon, LMSW Doctoral Candidate
APPENDIX B

DEMOGRAPHIC QUESTIONNAIRE

Demographic Questionnaire

Section I: Personal Information

Sex: Female Male	Age:	
Marital Status: Sing Married	leCohabi Separated	tant Divorced Widow\Widower
Children:Yes If yes, ages and sex:	No	
Race: African African Am Asian Asian Amer European A	erican/Black ican/Pacific Islander merican/White	Hispanic/Latina(o) Hispanic American Native American West Indian/Caribbean Other
		(Please specify)
Education: Did Not High Sch Two-Yea Bachelor	Complete High School lool Diploma\Certificate r Associate s Degree 's Degree	Master's Degree Doctorate Degree Other
Section II: Employment	Information	
Employment status prior to	b brain injury: Em Une	ployed employed
If employed prior to brain	injury: Full Time Part Time	
Type of employment	Length o	f time employed in position
Employment Status after b	rain injury: Emplo	oyed ployed
If employed since brain in	ury: Full Time Part Time	
Type of employment	Length o	f time employed in position
Is this the same job you ha	d prior to your injury?	Yes No

Have you received any post-injury training?YesNo
Section III: Health-Related Information
When did your brain injury occur?(month\year)
Type of injury:Open head injuryClosed head injury
How do you describe your current state of health? Excellent Good Fair Poor
How do you describe your state of health before your brain injury? Excellent Good Fair Poor
Are you currently experiencing any health-related problems?YesNo If yes, please specify
Did you experience any health-related problems prior to your brain injury?Yes No If yes, please specify
Classify level of injury:MildModerateSevere
Have you participated in a brain injury support group?YesNo If yes, how long?
Are you currently in a support group?YesNo If yes, how long?
Section IV: Other Pertinent Information
On a scale from 0 (no stress) to 100 (high level of stress), how would you rate your stress level since your brain injury?
What type of social support have you used since your injury to cope with stress? Significant Other Family Friends Support Group Internet Counseling Minister Other Other
(Please specify)
Have you received rehabilitation since your injury? Yes No