COPING METHODS UTILIZED BY DRIVERS INVOLVED IN MOTOR VEHICLE ACCIDENTS: NURSING IMPLICATIONS

A THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF MASTER OF SCIENCE

IN THE GRADUATE SCHOOL OF THE

TEXAS WOMAN'S UNIVERSITY

COLLEGE OF NURSING

BY

SUSAN G. CUNNINGHAM, R.N., B.S.N.

DENTON, TEXAS

DECEMBER 1978

The Graduate School

Texas Woman's University

Denton, Texas

October 25, 1978

We hereby recommend that the following thesis prepared under our supervision by Susan G. Cunningham

entitled Coping Methods Utilized by Drivers Involved in Motor Vehicle Accidents: Nursing Implications

be accepted as fulfilling this part of the requirements for the Degree of Master of Science

Committee:

Geraldine M. Gossen
Chairman

Janet Willard

Margie N. Johnson

Accepted:

Phyllis Bridges
Dean of The Graduate School

ACKNOWLEDGMENTS

I wish to express special gratitude to the following:

To my parents for their love, understanding and encouragement throughout this endeavor.

To my thesis committee for sharing this endeavor with me.

To the institution where the study was conducted for their cooperation and the use of their facilities.

To the patients who participated.

To Ginny and Kay for their friendship and understanding.

To Marion for being a friend as well as a typist.

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CHAPTER I

INTRODUCTION

Faced with stressful life events, the individual must develop methods of coping. Coping abilities learned by an individual determine how well that individual will maintain his equilibrium and state of well-being. Coping is individualistic and related to the individual's perception of the stressful event and his appraisal of the coping methods he chooses to use to reduce stress to a tolerable limit. He can use realistic or long-term methods of coping with stress that can effectively relieve stress for long periods of time, or he can use short-term methods which may reduce stress to a tolerable limit temporarily, but when carried on for long periods of time, do not deal with reality and can have a destructive or detrimental effect on that person. A person's coping abilities do not develop in a vacuum but, reflect the social context in which he receives experience and develops these skills. The difficulty with our rapidly changing society is that experience may poorly prepare persons for the types of life challenges they must face.

People who are not successfully coping will not perceive things clearly, will not think logically, will lose power of concentration, and will not be able to engage in problem solving activities. Most traffic accidents are initiated by driver action or inaction. Perceiving the situation clearly, thinking logically, concentrating, and the ability to problem solve the situation are extremely important functions of the driver in the prevention of motor vehicle accidents.

This study seeks to describe the coping methods, short or long-term, used by drivers involved in motor vehicle accidents. Nurses need to assess the coping methods used by people to deal with stress. If coping methods are short term and inadequate, nurses can explore alternative coping strategies with their client.

PROBLEM

The problem of this study was:

Do drivers involved in motor vehicle accidents utilize short or long-term coping methods?

PURPOSES

The purposes of this study were:

1. To identify short and long-term coping methods utilized by drivers involved in motor vehicle accidents

2. To determine if short or long-term coping methods are more predominantly utilized by drivers involved in motor vehicle accidents

THEORETICAL FRAMEWORK

The theoretical framework in this study utilizes Selye's (1956) theory of stress-adaptation and the concept of coping as defined by Lazarus (1966). Selye (1974) defined stress as the nonspecific response of the body to a stressor, in addition to the specific effects characteristic of each stressor. He stated that it makes no difference whether the stressor is pleasant or unpleasant. Lazarus (1966) obtained evidence that the cognitive appraisal by the individual of the degree of threat that the stressor imposed is a critical factor. The degree of threat influences the intensity of the demand made upon the adaptive potential of the body and thus the stress reaction. Every stressful event evokes an adaptation response.

The work of adaptation is the coping method. Selye (1950) stated that, "adaptability is probably the most distinctive characteristic of life" (p. 12). He commented on this demand for adaptation by saying, "it is what makes life possible on all levels of complexity. It is the basis of homeostasis and resistance to stress" (Selye 1974, p. 56).

Lazarus, Averill, and Opton (1974) regard coping as, "Problem-solving efforts made by an individual when the demands he faces are highly relevant to his welfare and when these demands tax his adaptive resources" (p. 250). Cognitive appraisal and coping methods are key mediators of the individual's response to stressors, and shape the somatic and behavioral outcomes. Primary appraisal determines the degree of threat, whereas secondary appraisal is when a range of coping methods is delineated. Reappraisal is when the original perception may be changed from threatening to benign (Lazarus 1966). Effective long-range coping methods neutralize the stressor and reduce the stress. Insufficient or short-term coping methods may temporarily reduce the stress, but eventually disequilibrium and deterioration in functioning is likely (Bell 1977).

The essence of Lazarus' (1966) approach to stress and adaptation through coping is summarized in Figure 1. The primary appraisal of the degree of threat created by the stressor is determined. Primary appraisal leads to the secondary appraisal and the choice of long or short-term coping methods utilized by the individual. Reappraisal of the stressor is then made. Long-term coping methods reduce stress and facilitate adaptation to the stressors, thus maintaining equilibrium. Short-term coping methods

temporarily reduce stress but adaptation does not occur resulting in disequilibrium. Only through effective long-term coping may equilibrium be maintained.

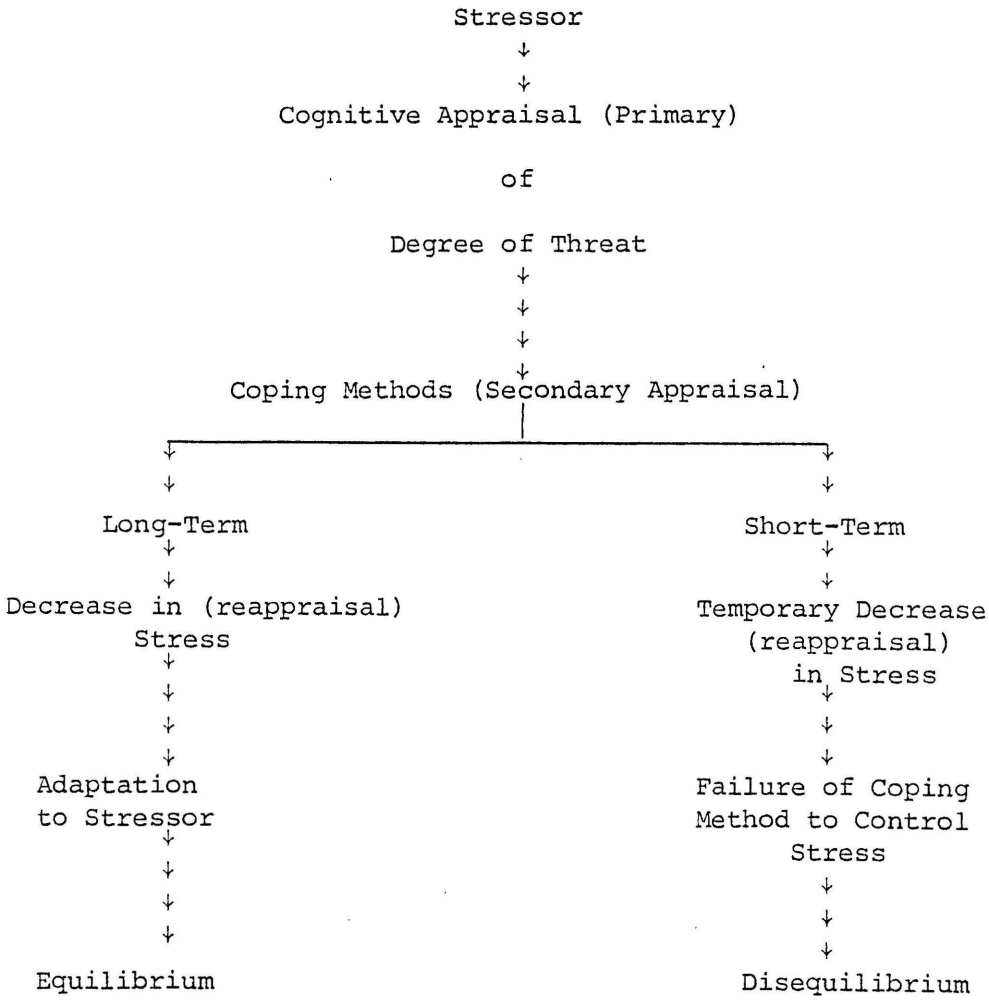

Figure 1: Conceptual Model of Theoretical Framework

BACKGROUND AND SIGNIFICANCE

According to the U.S. Department of Transportation and National Highway Traffic Safety Administration (1977), there were 45,181 fatalities due to motor vehicle accidents in 1976. Kaprio (1975) stated that for every person killed in a motor vehicle accident, between ten and fifteen persons are seriously injured and some thirty or forty receive minor injuries. The behavior of the road user, the psychological, physiological, and pathological processes that influence him, must be considered in motor vehicle accident prevention. Practical and economic arguments reinforce the need for a modern preventive and epidemiological approach to motor vehicle accidents. Korcok (1974) spoke of motor vehicle death and injury as the neglected disease of modern society. He encouraged the health professions to get involved in preventing this disease. Collins (1969) stated that despite the tendency to blame road conditions, and the fact that some motor vehicles themselves are often in dangerous condition, the human factor remains the most important cause of motor vehicle accidents.

Studies guided by the work of Holmes and Rahe (1967) as a framework to determine life changes, have shown how these changes create stress and may modify critical

emotional and mental functions that directly influence behavior, including driving behavior. A study by Selzer, Rogers, and Kern (1968) assessed the interpersonal and vocational-financial stresses of drivers at fault in fatal accidents and a matched control group. It was found that 52 percent of the fatal-accident group experienced such stresses, compared with only 18 percent of the control group. Another study by McMurray (1970) documented a link between life changes and traffic accidents with the results that the accident rate of persons undergoing divorce doubled during the six months before and after the divorce date. In a study by Selzer and Vinokur (1974) which looked at life change events of drivers involved in accidents, it was found that life change events were a significant factor in the accident process. We can make the assumption from past studies that life changes do evoke stress. Based upon the theoretical framework, it can be predicted that the individual will make an adaptational response to the stressor, neutralize the stressor, and reduce the stressor. If the event is managed through effective long-term coping, then equilibrium will be maintained.

Hamburg and Adams (1967) stated that a person's appraisal of threatening elements rests heavily on the personal meaning it has, the past environment, and

internalized dispositions. They state that both clinical observation and systematic research have neglected to study ways in which people cope with the threatening implications of difficult, transitional experiences. There have been some studies that looked at the individual's response to stress (Katz et al. 1970; Cohen and Lazarus 1973; Wolff et al. 1964; Bell 1977). Bell (1977) studied mental illness and wellness behaviors. She reported that the group with mental illness behaviors showed that significantly more stressful life events had occurred in the last six months and the group with mental illness behaviors reported significantly more short-term coping methods than the group with mental wellness behaviors. She emphasized the importance for nurses to identify stress and coping methods and discover ways to assist clients to cope more effectively.

Rankin (1976) stated that if stress continues and is not coped with adequately, then anxiety arises. The person's perceptual field is greatly reduced. Their ability to think clearly is disrupted. Due to the disruption of cognitive processes, problem solving is impaired. Lazarus (1966) supported this by stating that the disruptive effects of the threat of the situation and the existing stress on cognitive functioning is great and that a narrowing or limiting of the perceptual field occurs in proportion to

the degree of threat. McFarland and Moore (1957) stated that most traffic accidents are initiated by driver action or inaction. Perceiving the situation clearly, thinking logically, concentrating, and problem solving are important functions of the driver in preventing motor vehicle accidents.

Lazarus (1966) stated that the theoretical positions on the processes by which performance is affected by stress is incomplete, since they ignore the great variety of coping processes observed in stress situations. He stated that the observable consequences of threat depend on the type of coping process adopted by the individual. Prediction of performance changes under stress requires specification of these coping processes which intervene between threat and adaptive functioning. Mechanic (1976) supported this view:

> In our concern for diminishing stresses that tax the coping abilities of individuals, we must recall that much of human activity involves seeking out stress and searching for the exhilaration of new experience. Stress is a condition for growth, and it is through successful exercise of mastery that people develop a sense of worth and competence. Thus, the task for society may not be to diminish the sense of challenge that contributes to life and growth, but to better facilitate the ability of individuals and groups to develop the competence to deal successfully with challenges and strain. Studies of stress must give greater attention to people's adaptive struggles, and how personal and group effectiveness can be enhanced (p. 6).

Nursing research is directed toward substantiating, clarifying, and testing existing theories. Research based on theoretical concepts serves as an explanation for observable concrete events, phenomena, and will also predict the occurrence of unobserved events (Brown 1964). Nursing implements these theories into practice. Nursing models by Neuman and Roy (Riehl and Roy 1974) have integrated stress and adaptation theory into nursing practice.

According to Rankin (1976), a general understanding of stress and adaptation is necessary to be able to carry out the nursing process adequately. Changes in behavior, whether adaptive or maladaptive, provide cues of increased disequilibrium and the existence of a stress state. Individuals use a wide variety of coping strategies as they attempt to adapt in the event of threats to their biological, psychological, and sociocultural functioning. In assessing the stress state, evaluating the stressor, and investigating the behaviors, the nurse can develop her plan of care based on client needs. Through careful observation, the nurse can compare the individual's behaviors with previous levels of functioning and with biological, psychological, and sociocultural norms. The nurse then can infer the person's ability to cope with the existing stress state. With this information, the nurse can plan care to

help solve identified problem areas. Nursing actions can be designed to intervene directly and/or indirectly in the stress experience of an individual. Use of knowledge and technical skill can prevent, reduce, remove, or balance the stressors that the person encounters. To cope, it is often necessary to seek assistance in the identification of focal problems, existing coping methods, and new alternatives. The nurse gives direction to the client by providing specific information and supportive measures. The nurse can also provide information on alternative behaviors and help the person test new coping behaviors.

Bell (1977) stated that it is a challenge to nurses to consider the relationship of stressful life events and the long or short-term coping methods which individuals use for health maintenance and illness prevention. Nurses need to consider the methods individuals use to cope and learn ways to assist people to cope more effectively with the stressors they experience.

DEFINITION OF TERMS

For the purpose of this study, the following definition of terms was applicable:

1. Coping method -- the specific way or strategy a person employs to deal with a significant threat to his stability and to reduce stress to a tolerable limit

a. Long-term coping method -- strategies a person employs to effectively cope with a stressor that can relieve stress for long periods of time. They include talking it out with others, trying to find out more about the situation, belief in a supernatural power who cares about the individual, taking some definite action on the basis of present understanding, drawing on past experiences, working it off by physical exercise, and making alternate plans for handling the situation

b. Short-term coping method -- strategies a person employs which may reduce stress temporarily to a tolerable limit but which carried on for long periods of time, do not deal with reality and may have a destructive or detrimental effect on the person. These have been identified as using alcoholic beverages, day dreaming, trying to see the humorous aspects of the situation, not worrying about it with the belief that everything will work out fine, sleeping more, using food and food substitutes (smoking, chewing gum, eating more), getting prepared to expect the worst, cursing, using drugs, becoming involved

in other activities to keep one's mind off the problem, and crying (Bell 1977)

2. Motor vehicle accident -- a vehicular accident that involved the subject as driver and resulted in property damage or personal injury (Selzer and Vinokur 1974)

3. Stress -- nonspecific response of the body to a stressor in addition to the specific characteristic of each stressor (Selye 1974)

4. Stressor -- that which produces stress (Selye 1974)

LIMITATIONS

For the purpose of this study, the following limitations were applied:

1. The reliability with which the subject answers the questionnaire cannot be established

2. The outcome reflected only how the subject will respond at that particular point in time

DELIMITATIONS

For the purpose of this study, the following delimitations were applied:

1. The subjects were males and females between the ages of 18 and 65 years of age who were drivers

involved in motor vehicle accidents and who are presently hospitalized as a result

2. The subjects were in stable medical condition and will be physically and mentally capable of answering questions before being asked to participate

3. The subjects were able to read English and answer the research questionnaire

ASSUMPTIONS

For the purpose of this study, the following assumptions applied:

1. The use of coping methods is necessary to maintain one's equilibrium and state of well-being in response to internal or external environmental stimuli

2. Coping methods are individualistically related to the perception of the stressful event and the appraisal of the coping methods one chooses to use to reduce stress to a tolerable limit

3. Long-term coping methods can effectively relieve stress for long periods of time

4. Short-term coping methods can effectively relieve stress to a tolerable limit temporarily, but when used for long-periods of time, may have a destructive or detrimental effect on the person

SUMMARY

Chapter I presents the theoretical framework of stress and adaptation and describes long and short-term coping methods. The purposes and rationale for the study were also presented. Chapter II reviews the literature on theories of accident causation. Life change is reviewed as it has been positively correlated to accidents. The theories of stress and coping are reviewed as well as the general response to stress and the key mediating factors in the stress response. Long and short-term coping methods are described. Support is offered for using stress and adaptation theory in implementing the nursing process. Chapter III describes the setting, population, and the tool, Bell's Coping Scale Questionnaire, and methodology. Chapter IV analyzes the data. Chapter V offers the summary, conclusions, and implications derived from the analysis of Chapter IV and makes recommendations for further study.

CHAPTER II

REVIEW OF LITERATURE

People of today find themselves in the midst of much change which may or may not create stress in their lives. Studies have shown that stress as a result of change may influence driving behavior. One factor which affects the nature and severity of the stress is the coping methods utilized by an individual. Some methods of coping have a more lasting effect.

The nurse caring for a trauma patient, such as a driver involved in a motor vehicle accident, must have knowledge of stress and the coping methods an individual utilizes. In planning individual nursing care, this knowledge is necessary in the nurse's assessment of the client's response to stress and the possible influence it may have on the client's driving behavior.

This chapter contains a review of the past factors and theories which have been studied concerning accident causation, stress, and coping. It will also look at stress and adaptation theory in nursing.

Susceptibility to Accidents

Much research has been conducted on accident causation, and yet no theory of the cause of accidents has emerged. By definition, an accident is a happening that is determined by chance. According to Tillman and Hobbs (1949), the frequency distribution of the accidents among the members of a group should follow the pattern established for chance happenings. If a study of accidents is carried out for a long period of time, or if the accidents are frequent, then the distribution of accidents throughout the population should take the form of a normal bell-shaped curve. However, this curve is usually skewed in character. This is caused by a high frequency of accidents in a small group at the upper level of the curve. An accident is not a single isolated event, but part of a dynamic process which starts before and continues after the actual trauma (Hirschfield and Behan 1963).

Nacman (1971) stated that accidental injury may be caused by factors within the person and the social and physical environment. The initial exposure to potential trauma and how the individual subsequently reacts is determined by the dynamic interactions of these factors. The exposure of individuals to a hazardous situation may result

from circumstances outside their control or be caused by intrinsic factors and the influence of their environment.

Despite the fact that road conditions and motor vehicles themselves are often causative factors in accident, the human factor remains the most important cause of motor vehicle accidents (Collins 1969). All of the factors contributing to accidents are not known; some are uncertain, including the role of driver psychology (Whitlock 1971). McFarland and Moore (1957) stated,

> . . . recent research has indicated that factors of attitude, personality and adjustment are of greater importance in safe driving than sensory defects, reaction time, or psychomotor skills (p. 896).

Accident Proneness

The concept is that in a group, certain individuals are more susceptible to accidents than could be expected by chance, even though they are exposed to equal risk (Bell 1971). The concept of an "accident prone" personality is one explanation of accidents on a psychological basis. "Accident proneness" is a term which was coined by Osborne, Vernon, and Musico (1922). Newbold (1926) continued this research and her results substantiated the earlier findings. Dunbar's (1936) classic study established "accident proneness" as an accepted fact. Johnson (1938) analyzed the records of 30,000 drivers through a period of six

consecutive years and found that nearly 40 percent of all accidents in the population occurred in less than 4 percent of the drivers.

Weisz (1974) studied individuals who had sustained trauma. He found that many had sociopathic problems and had been habitual victims of trauma. For others, it was their first trauma and no sociopathic behavior was noted, however they were subsequently readmitted as trauma cases. He proposed a chain reaction such as a psyche-trauma-psyche interrelationship. He felt that in the premorbid personality, certain socio-educational factors contributed to the trauma and severity of treatment contributed to future trauma. Weisz (1974) also felt that the individual was "predisposed" to incidents of violence leading to trauma. He proposed that a study of the tendency of trauma patients to certain commonalities was needed.

Signori and Bowman (1974) emphasized that findings by others have not been as strongly supportive of the viability of the concept of "accident proneness." McFarland and Moore (1962) noted that attempts to demonstrate the existence of a greater number of accident repeaters among accident-prone drivers than would be expected by chance, have been unsuccessful. Forbes (1939) was able to show from an analysis of automobile accident records, that the

small group of accident repeaters which does exist is constantly shifting with old members dropping out and new ones being added. A more recent study by Burg (1970) supported this view. Burg found that research reported on accident-prone drivers concerns a very small segment of the driving public for only a limited period of time. There has always been a controversy concerning this concept. Selzer, Rogers, and Kern (1968) pointed out that this concept suggested a fixed state in which an individual is consistently more vulnerable to causing an accident and that obviously from previous studies, this did not prove to be true.

Personality Factors Related to Accidents

Many of the theories regarding accident causation involved personality variables as contributing factors to the accident process. Several studies demonstrated that many psychological factors such as aggressiveness, depression, and social maladjustment were significantly related to traffic accidents (McGuire 1956; Cresswell and Grogatt 1963; Schuster and Guilford 1964).

Conger et al. (1959) reported a clinical study of twenty airmen in which psychiatric interviews and psychological tests were used. Results showed that the accident

group, as compared to the no-accident group, had less capacity for controlling hostility, were less able to tolerate tension, feared loss of love and support, and were either very self centered or excessively concerned with others. Darmach and Payne (1961) also found in their study on accident causation that inability to tolerate tension was an important personality trait in subjects involved in accidents. Hertz (1970) supported the above findings by demonstrating a relationship between poor control of hostility and low tension tolerance with susceptibility to accidents.

Tillman and Hobbs (1949) in their study of the accident-prone driver identified aggressiveness, impulsiveness, exhibitionistic tendencies, and problems with authority in the high accident group. Selzer, Rogers, and Kern (1968), in a matched control group study of ninety-six drivers, showed that paranoid thinking and depression were associated with accident involvement. Shaffer et al. (1974) found that drivers who had been fatalities in motor vehicle accidents were perceived by informants as more belligerent, verbally expansive, negative, and hyperactive than the normal population.

McLean and DeReamor (1961) stated that, "the majority of accidents encountered are indeed the result of an

individual personality interacting with the total life situation" (p. 563). Franzmeir (1969) indicated that driving under the influence of emotion was as dangerous as driving under the influence of alcohol. Emotions--specifically anger, hostility, severe anxiety, and depression--contribute to 80 percent of traffic accidents. These emotions cause inattention, inhibit judgment, mar perception, and invite reckless driving.

Most researchers studying accidents believe their cause to be multifactorial. However, there is a general belief that psychological factors are chiefly at fault. There is a continuing expression in psychological and psychoanalytical writing that some accidents are highly linked to psychological motivations and/or conflicts (Tabachnick 1976).

The Relationship of Alcohol to Accidents

It was reported by Perrine (1972) that alcohol was involved in a high proportion of traffic accidents. Dysinger (1972) estimated that the prior use of alcohol was causally related to 50 percent of motor vehicle accident fatalities. Alcohol was the major identified contributing factor to traffic accidents.

Signori and Bowman (1974) stated that it would be an over-simplification to assume that the pharmacological effects of alcohol provide a full explanation for the driver's behavior. The alcohol is merely the coping method that the individual personality has used to cope with the life situation.

Selzer et al. (1967) presented evidence that the drinking individual's personality and particularly that of the alcoholic must be considered in his excessive accident involvement. They emphasized, however, that intoxication itself not be minimized as a causative agent. They postulated that traffic accidents where alcohol was involved should be regarded as the outcome of interplay between certain personality traits which are liberated upon intoxication and the impairment in driving caused by the physiological effects on the central nervous system.

The Accident Process

Another significant addition to accident theory was made by Behan and Hirschfield (1963). They reported that many industrial accidents took place as part of an ongoing dynamic situation which they called the "accident process." They revealed in their study on approximately three hundred cases of industrial accidents that physical

injury figured as one incident in a psychological process. The accident process, prior to the injury, was characterized by increasing tension, lapses in safety precautions, infractions of rules, and depression. They postulated that as a result of certain paradoxical conflicts going on in the accident victim's life, he unconsciously moved towards the situation of having an accident and the resulting disability in order to solve his conflicts.

Osmon (1968) supported the theory of a psychological accident process by postulating that the accident occurred as one incident in a psychic process involving susceptible individuals with impaired ego functioning. He found after interviewing subjects who had been involved in accidents that the accident victims were likely to be undergoing an imminent transition in their lives that imposed greater demands and responsibilities. If these demands were not being met with adequate coping, then stress increased and ego function decreased. With increasing weakness of the integrative functions of the ego, phases of passivity alternated or coexisted with activity. The accident may occur at a point where passivity breaks through.

Vehicles as a Mode of Suicide

Some theories of serious or fatal accidents have emphasized unconscious self-injury and half-intentional

suicide (Tabachnick 1976). Some individuals may use the motor vehicle as a method of self-destruction after some overwhelming life crisis.

Freud (1901) and Menninger (1936) theorized that many serious fatal accidents were atypical forms of suicide. This thinking proceeded from the assumption that human beings possessed a death instinct which in certain individuals would overpower instincts furthering the preservation of life. An accident was seen as a manifestation of death instinct.

A study by Selzer and Payne (1962) pointed toward the possibility that unconscious self-destructive impulses are a major, although covert, factor in the etiology of certain automobile accidents. Another study by Selzer, Rogers, and Kern (1968) showed that a group of drivers involved in fatal accidents frequently had a history of suicide attempts or thoughts. Grollman (1971) estimated that one-fourth of the drivers who die in automobile accidents cause them subintentionally by imprudent and excessive risk-taking.

Tabachnick (1976) recently supported a concept of a "death trend," a notion which is similar to Freud's death instinct. Tabachnick recognized in accident victims strong conflict regarding independence. A resulting trend

is to withdraw. This trend is not a "half intentional self destruction," although it sometimes accompanies fantasies of death. The death trend is the result of increased risk when a particular psychological drive interacts with a means of implementing other individual needs.

Transient Factors Related to Accidents

Much of the earlier research on accident liability was guided by the concept that high accident liability was a relatively permanent characteristic of problem drivers. This view is now seriously being questioned because of data showing low correlations for accidents by the same drivers across different time periods. Due to the relatively low correlations between personality variables and accidents and for accident rate variations for the same drivers during different time periods, one turns to the possible role of transient factors (Selzer and Vinokur 1974).

Many factors affecting an individual for only a short period of time may predispose him to accident involvement. Mattsson (1975) felt that a temporary accident syndrome might be more in keeping with actual statistics. Often injured individuals have had a series of two or three accidents or other unsettling events within a short period of time. Froggatt (1961) stated that a person's

susceptibility to accident, even when risk is kept constant, varies through time depending on such personal factors as health, fatigue, worry, etc. Individuals may have periods in which they are more liable to accident, and these periods may be related to an identifiable and perhaps transient condition. Transient factors may include pressures from the environment surrounding the individual. Robinson (1975) stated:

> . . . this is probably the most stressful time in the history of western civilization. We are living in an age of crisis--the energy crisis, the economic crisis, the environmental crisis, the political crisis. In addition--personal stresses--marriage, finances, children--are coupled with other stresses such as competition in school or business, overcrowding of population, congestion in travel, pollution, racial tensions, increase in crime, and the fast pace of modern living. Together, all these factors are causing people more anxiety and depression, and constant stress than the ancient problems of plague, famine and local wars (p. 75).

Wolff (1968) emphasized that the health and behavior of an individual is bound up intimately with the adaptive demands placed upon him by the environment.

Life Change Related to Accidents

The rate of change is a transient environmental factor which should be considered in accident susceptibility. Toffler (1970) stated,

> We have in our time released a totally new social force--a stream of change so accelerated that it

> influences our sense of time, revolutionizes the tempo of daily life, and affects the very way we feel the world around us (p. 17).

Wolff (1968) stated that the individual's adaptive capacities could be taxed by the need to accommodate to a changing world. Too much change occurring in a short period of time could place a great challenge on an individual's body and a great number of changes in a short period of time could overwhelm the ability to adapt. Dubos (1965) stated that,

> . . . sudden and profound changes in the ways of life, whatever their nature, always bring about a decrease in the resistance of the body and the mind to almost any kind of insult (p. 275).

The concept of life change was developed by Holmes and Rahe (1967). Research has demonstrated positive correlation between life events and many forms of physical and mental illness (Petrich and Holmes 1977). Several studies (Selzer, Rogers, and Kern 1968; Brunner and Selzer 1969; Selzer and Vinokur 1974) have correlated life change variables to accidents. These studies support the hypothesis that motor vehicle accidents are likely to occur after periods of increased life change.

The Concept of Stress

The concept of stress helps to explain the relationship of life change to illness and accident. Each individual experiences personal change in their life as well as rapid and accelerating social change. The

individual experiences stress as he attempts to adapt to these changes. Selye (1965) stated that stress is the rate at which we live at any moment. All living beings are constantly under stress, and anything--pleasant or unpleasant--that speeds up the intensity of life causes a temporary increase in stress.

Selye's Theory of Stress

No man in recent decades has influenced theory and research on stress more than Selye (1956). He theorized that individual physiological reactions to noxious agents or "stressors" were actually coordinated as part of a general syndrome of defense regardless of the type of stressor. He referred to this syndrome as the general adaptation syndrome which consists of three stages: (1) the "alarm reaction" where the initial mobilization of defensive forces occurs; (2) the "stage of resistance" where adaptation occurs and the body attempts to resist the stressor, but at the same time has a decreased resistance to other stressors; and (3) the "stage of exhaustion" and eventually death if the stressor is severe enough and applied for a sufficient length of time.

Selye (1956) believed that stress is necessary for life. It becomes harmful or damaging when it occurs with

too great a frequency or too great a quantity, and when it is unduly prolonged. He spoke about "adaptation energy" in terms of hidden reserves of adaptability and as soon as local stress consumes the most readily accessible local reserves, local exhaustion sets in and the part stops automatically. During this period of rest, more adaptation energy can be made available. Individuals are born with only so much adaptation energy and each adaptive reaction exacts a price and helps to deplete our store of energy. Man's energy supply can be worn down until he no longer responds adequately to environmental stimuli. It would appear that when the stress level reaches a certain degree, the individual's responses to his environment are altered and he becomes more prone to motor vehicle accidents.

Behavioral Responses to Stress

Appley and Trumbull (1967) discussed the following behavioral responses as indices of the occurrence of stress: increased reaction time, erratic performance rates, malcoordination, error increase, and fatigue. These behavioral responses could decrease an individual's performance ability and thus predispose the individual to a motor vehicle accident.

Moss (1973) discussed three general responses to stress: (1) general changes in physiological processes that alter the body's resistance to disease agents; (2) pathological changes in the body that would result directly from the general responses; and (3) changes in the responsiveness of the central nervous system. The latter increases the possibility of accidents and error.

> It is clear that adrenal hormones, autonomic activity, hypothalmic activity, and related hormonal secretions have profound influence upon the brain. Brain amines cause the brain to be extremely sensitive to sympathetic responses to information. Under extreme excitation, there is actual disruption of the cerebral cortex electrical functions, making rational thought impossible. At other times, parasympathetic activity can be accompanied by apathy and unresponsiveness to otherwise alarming information. Under such circumstances, the individual's capacity to perceive correctly the situation in which he finds himself may be impaired; his capacity to anticipate possible problems and avoid accidents may be reduced; and his physical coordination may be altered temporarily so that the possibility of physical trauma or mistakes is much increased (Moss 1973, p. 119).

The Concept of Coping

It has been shown that this is probably one of the most stressful times in the history of western civilization and that the health and behavior of an individual is intimately bound with the adaptive demands placed upon him. The behavioral response to stress has been discussed and how it may lead to accident causation. How can the fact

that different individuals respond to identical conditions in different ways be explained? Why doesn't each individual exposed to identical stimuli experience disequilibrium and a decrease in functioning abilities that may lead to an accident? Appley and Trumbull (1967) noted that with few exceptions, no one stimulus is a stressor to all people. It has been observed repeatedly that response to any given stimulus may vary widely from one individual to another. It has been noted that such responses become increasingly predictable only when other intervening factors, such as the previous experiential history, the coping methods, or the idiosyncratic factors in threat perception, are taken into consideration for each individual (Mason 1975). Studies by Bourne, Rose, and Mason (1968) of soldiers in Vietnam, and by Fenz and Epstein (1967) of parachutists suggested that psychological and concomitant physiological response to threat by the individual is neither uniform or simple.

Katz et al. (1970) found in their study on women undergoing breast biopsy that a stressor does not necessarily evoke comparable distress in each individual. The distress is contingent upon how the stimulus is perceived, interpreted, and the coping methods used to defend against the stressor. Lazarus (1974) stated that the nature and

severity of the stress depended upon at least three factors: (1) the formal characteristics of the stressor; (2) the quality of the emotional response generated by the stressor; and (3) the coping methods mobilized. A very significant and intimately related aspect of stress is the concept of coping. Once a stimulus is judged as harmful, coping methods to undo the harm or to get the person out of jeopardy are set into motion (Monat and Lazarus 1977).

While the concept of coping is intimately tied to that of stress, it has been largely neglected by researchers until recently (Monat and Lazarus 1977). There seems to be a growing agreement among professionals that coping refers to efforts to master conditions of harm, threat, or challenge (Lazarus, Averill, and Opton 1974; Murphy 1974; White 1974). Lazarus, Averill, and Opton (1974) regarded coping as problem-solving efforts made by an individual when the demands he faces are highly relevant to his welfare, and when these demands tax his adaptive resources. The concept of coping includes the most casual and realistic forms of problem-solving activities as well as the most pathological efforts to deal with real or imagined dangers.

Lazarus' Concept of Coping

Lazarus' (1966) concept of coping involves cognitive activity when the threat is first perceived and appraised by the individual followed by consideration of the consequences of his coping behavior. Engel (1962) supported this view of cognitive appraisal and coping behavior in his definition of psychological stress:

> All processes, whether originating in the external environment or within the person, which impose a demand or requirement upon the organism, the resolution of handling of which necessitates work or activity of the mental apparatus before any other system is involved or activated (p. 264).

Lazarus' (1966) central concept is appraisal, which is perception distinguishing the potentially harmful from the potentially beneficial or irrelevant. Appraisal involves not only a response to the perception of some threatening condition, but also potential avenues of solution. Primary appraisal determines the degree of threat, whereas secondary appraisal is delineation of coping methods, and reappraisal is when the original perception may be changed from threatening to benign. It is this cognitive process which differentiates a stressor from a stimulus and which determines the nature of the stress reaction and subsequent coping methods.

Lazarus (1974) stated that every instance of adaptive commerce between an individual and his environment is appraised cognitively as to its significance for the person's well-being. These appraisals underlie the quality and intensity of the emotional stress state. Coping methods, or self-regulatory processes as Lazarus calls them, as well as cognitive appraisals are key mediators of the individual's stress reaction. Katz et al. (1970) stated that psychological and concomitant physiological response to threat by humans is neither uniform nor simple. The stimulus must first be perceived, then interpreted in the context of prior experience, and finally, if read as a threat, it is still to be confronted by the psychological barriers of coping methods. Menninger's (1963) approach to stress and adaptation is that tension affects the balance between ego function and stress reduction. He saw adequate coping methods as vital to reduce the tension and restore the vital balance and ego integrity. Caplan (1964) postulated in his crisis theory that if the crisis or stressful life event is managed by effective coping methods, the individual learns new coping behaviors and strengthens his emotional and problem-solving ability. If insufficient coping methods are involved, deterioration in functioning is likely.

Mason (1971) pointed out that coping processes are constantly shaping the endocrine response to a stressor. Both Lazarus (1966) and Mason (1971) suggested that the key mediator of Selye's "general adaptation syndrome" may be psychological. They, therefore, implied that the pituitary-adrenal cortical response to a stressor may require that the individual recognize the threat. There is some empirical evidence consistent with the assertion that the key mediator of the "general adaptation syndrome" is psychological. Symington et al. (1955) found that when an animal is unconscious, it can sustain bodily harm without the endocrine mechanisms of the G.A.S. becoming active. They also showed that comatose patients who were dying from injury or disease showed a normal adrenal cortical condition as assessed by autopsy. Patients who were conscious, however, during the fatal disease process did show adrenal cortical changes upon autopsy. Turlow (1971) found in his study of industrial employees that a person's subjective appraisal of social change in their life appeared to bear a stronger relationship with their becoming ill than did the objective aspect of the social change itself. Studies such as these supported the possibility that it is the psychological significance of the injury or condition rather than the

injury or condition itself that produces the adrenal cortical changes associated with the G.A.S.

Cognitive appraisal leads to the coping methods which also control the stress reaction. Lazarus (1974) stated that the emotions related to stress and, thus, the stress reaction, are constantly changing as the individual obtains feedback from their reactions, which are the methods they used to cope. From this feedback, they reappraise their relationship with the environment. If adequate coping has taken place, the threatening event becomes benign and the stress reaction controlled. There are countless observations of the important role the coping methods play in controlling the stress reactions.

Wolff et al. (1964) studied the reactions of parents who experienced the stressor of a child who was dying of leukemia. Parents who were coping well by successfully denying the seriousness of their child's illness, were found to secrete far less seventeen hydroxycorticosteroids than those parents who were not denying the seriousness of their child's illness.

Weiss (1972) studied Albino rats exposed to electrical shocks. Some could perform a coping response to avoid or escape the shock and the others were yoked and could not perform the coping response. Both groups received the same

amount of electrical shocks. The yoked rats unable to perform the coping response developed more extensive gastric lesions.

Related observations have been made in studies of coping methods utilized in patients with a serious physical impairment. Hamburg, Hamburg, and DeGoza (1953) studied patients with severe burns. Those patients who sought information and verbalized adjusted better to the stress of their injury. Visotsky et al. (1961) also found in their study on paralytic polio victims that those patients who coped through verbal interaction felt more secure, regained a sense of competence, and adjusted to the situation better than the group that did not verbally interact.

Andreason, Noyes, and Hartford (1972) studied the coping behavior of twenty adults suffering from severe burns from one to five years after initial hospitalization. Seventy percent were considered to be adjusting well. Renewed religious faith was a coping method which figured prominently in those well adjusted.

Cohen and Lazarus (1973) studied surgical patients. They found that those patients who were given information prior to surgery coped better postoperatively than the group who was not given information.

Coping processes are always involved in the emotional and somatic outcome of a stressful transaction. If an individual successfully copes and neutralizes the stressor, they have a lessening or absence of the stress reaction. They do not exhibit disequilibrium, or a decrease in functioning ability that might accompany it and lead to an accident. Dysinger (1972) stated:

> There is increasing evidence that frequent accidents are one manifestation of a person's poor adjustment to the social and personal demands of life and they can happen, therefore, to anyone who at anytime makes poor adjustment (p. 32).

Long- and Short-Term Coping Methods

A coping method is the specific way a person deals with a significant threat to his stability and reduces stress to a tolerable limit (Bell 1977). Wolf and Goodell (1968) proposed that the individual's perception of and response to a threat depend upon hereditary factors, socio-cultural milieu, individual needs and desires, and early conditioning.

Coping methods first investigated were those of individuals involved in acute crisis: severe burn victims (Cobb and Lindemann 1943); grief (Lindemann 1944); and surgical patients (Janis 1958). Hamburg (1974) reviewed these studies and others concerning coping methods

individuals use in acute crisis. He found that the outcome for these individuals was sometimes surprisingly favorable if adequate coping behavior was utilized.

Menninger (1963) identified several methods individuals use to cope with stress: food and food subtitutes; alcoholic beverages; laughing and crying and cursing; boasting; sleep; talking it out; thinking through including rationalization; working off (physical exercise); acting to alter the situation; pointless overactivity; fantasy formation and daydreaming; and self-discipline. Sidle et al. (1969) designed a scale to assess coping methods. The questionnaire was administered to college students. They were asked to rate their likelihood of using each strategy in each particular situation presented to them. The following ten strategies were identified as relatively independent ways of coping: trying to find out more about the situation; talking with others; trying to see the humorous aspects of the situation; not worrying about it; becoming involved in other activities to distract one's mind; taking positive action based upon understanding of the situation; being prepared to expect the worst; making alternate plans for handling the situation; drawing upon one's past experience; and trying to reduce tension by drinking, eating, smoking, and exercise. Following a review of the literature,

Bell (1975) identified several independent ways of coping with stress. She divided them into long-term and short-term methods based on the reality oriented, constructive effect each has in dealing with stress for a long duration of time. She found in her study on mental illness and wellness behaviors that the group with mental illness behaviors used significantly more short-term coping methods than the group with mental wellness behaviors.

Lazarus (1974) distinguished between two types of coping methods, direct action and palliative. With the use of direct action coping, the individual tries to alter or master the stressor or somehow prepare to meet the danger. Palliative coping methods can be intrapsychic in nature, such as the traditional defense mechanisms. Palliative methods do not actually alter the threatening or damaging event but make the person feel better. When carried on for long periods of time, they do not deal with reality and may have a destructive or detrimental effect.

Bell (1977) referred to direct action coping methods as long-term. A discussion of the long-term coping methods identified in Bell's (1975) Coping Scale follows:

1. "I talk it out with others (friend, relative, or professional)" is the basic modality of human

relationships. This method is the most used method in psychotherapy. Morgan and Moreno (1973) stated that there was great therapy in "getting it off one's chest." Vitsotsky et al. (1961) in his study on paralytic polio patients found that verbal interaction among patients helped build security in the more helpless patient and a sense of competence in those making significant recovery. Used effectively, the method can reduce stress through the discovery of new ideas and solutions that can occur in the talking/listening interaction (Bell 1975).

2. "I try to find out more about the situation" involves information seeking to discover additional facts and viewpoints about the conflict situation. Janis et al. (1969) found in his work with surgical patients that those who sought realistic information prior to surgery coped much better postoperatively than those who did not seek information. As more reality is perceived, stress is often relieved.

3. "I take some definite action on the basis of my present understanding" is an effective way of confronting the conflict situation and discharging stress (Bell 1975). As has been repeatedly stated by Lazarus (1975), a person may alter their psychological and physiological stress reactions in a given situation simply by taking

action. In turn, this will affect their appraisal of the situation, thereby altering the stress.

4. "I draw on my past experiences" may have significant value in relieving stress as one relates old guidelines for behavior in stressful situations to the present one. Caplan (1964) stated that if the individual learns new coping behaviors in a crisis situation, he strengthens his emotional and problem solving ability.

5. "I make several alternate plans for handling the situation" shows that the individual is using cognition in determining choices of coping and considering priorities involved in the alternate methods (Bell 1975). According to Caplan (1964) an individual is constantly faced with a need to solve problems in order to maintain equilibrium. Alternatives for solving problems give more security and confidence to the individual, and work very effectively in relieving stress.

6. "I believe in a supernatural power who cares about me" was felt by Bell (1975) to be of great reassuring value. Spiro (1965) offered evidence in his study on Burmese Buddhist monks, that religion often serves as a highly efficient coping device by being a culturally constituted and approved coping method. Katz et al. (1970) stated from their study on coping methods utilized by women

undergoing breast biopsy, that a careful review of their material left them with little doubt that belief in a supernatural power was indeed an effective coping method.

7. "I work if off by physical exercise" includes any large-muscle activity that dissipates stress (Bell 1975). Efficient relief may be obtained if the muscular activity is directed toward changing the situation. Studies of patients anticipating surgery (Andrew 1970; Cohen and Lazarus 1973) revealed that patients coped more successfully with their distress when they were occupied with activities that were directly related to their physical condition.

Bell (1977) referred to palliative coping methods as short-term. A discussion of the short-term coping methods identified in Bell's (1975) Coping Scale follows:

1. "I use alcoholic beverages" may temporarily reduce stress; however, it denies reality, impairs judgment and may become habit forming. Its effects as a central nervous system depressant entice an individual to forget their problems for a short-lived time (Menninger 1963).

2. "I daydream" is not considered a long-term method of coping because it is not effective when used exclusively without other methods (Bell 1975). Smith (1974) felt that daydreams had some value due to their emotional relief. A certain amount of daydreaming is

good, but it can impair the necessary qualities of reality thinking or effective acting (Menninger 1963).

3. "I try to see the humorous aspects of the situation" is a temporary way of discharging stress (Bell 1975). Mechanic (1962) and Sidle et al. (1969) found that this was a coping method frequently used by students before an exam. It does have value as a short-term coping method but is not based on reality and solving the problem.

4. "I don't worry about it. Everything will probably work out fine." This method may be considered as denial and can actually endanger the life of an individual. The study by Katz et al. (1970) showed how denial postponed women with a suspicious lump in their breast from seeking medical help. This method may serve a temporary positive function in preventing the individual from being overwhelmed, but there must be some action taken if the method is to suffice on the long-term basis.

5. "I sleep more." According to Bell (1975) this is another withdrawal from reality of the stressor.

6. "I use food and food substitutes" is only short-term in that there are psychologically restorative effects from eating food and using food substitutes such as cigarettes and chewing gum, but does nothing to deal with the problem. Many people center love and being loved

around food and employ this method for a feeling of well-being (Menninger 1963).

7. "I get prepared to expect the worst" is a method which shows passivity and pessimism. It inhibits the individual from taking direct action (Bell 1975).

8. "I curse" is an effective temporary device that is easily and often abused. If it becomes a habit, it loses its usefulness as an escape-valve (Menninger 1963).

9. "I cry" is another temporary safety-valve which is perhaps the most human and the most universal of all relief measures. It serves as a very useful but temporary method for relieving stress and if accompanied by direct action can be very effective (Bell 1977).

10. "I use drugs" is similar to the use of alcohol where one temporarily finds relief from the stress. It, too, denies reality, impairs judgment, and is only effective for a short-lived time (Bell 1975).

11. "I become involved in other activities to keep my mind off of the problem." This is short-term due to the fact that it may temporarily relieve stress but if not goal directed toward reducing the threat, it will not be as effective. This method has gained support recently

as a very valuable short-term method when used with long-term methods (Gal and Lazarus 1975).

The use of short-term coping methods may temporarily relieve stress and serve a positive function in preventing the individual from being overwhelmed for a while. Short-term methods do have their place in coping. However, they become pathological when they interfere with the solution of a problem (Murphy 1974). If the individual does not take direct action with long-term coping methods to solve the problem, adaptation to the stressor and maintenance of equilibrium will not occur. Thus, disequilibrium and a decrease in functioning ability that may lead to an accident is likely to occur.

Stress and Adaptation Theory in Nursing

According to Rankin (1976), incorporating the concepts of stress and adaptation into nursing practice can increase the effectiveness of nursing care. Knowledge of the stress and adaptation processes provides a model for considering the total person, variables influencing the situation, and the effects of the stressor and stress reaction on the individual's functioning ability. Such information influences and guides each step in the nursing process. She feels that an understanding of stress and

adaptation by the nurse is necessary to carry out the nursing process adequately.

Neuman (Riehl and Roy 1974) integrated stress and adaptation theory into nursing practice with her Health Care Systems Model. This model views the "total person" framework as an open system model of two major components--stress and reaction to stress. This model is aimed toward identification of possible stressors that could occur or that already exist. After identification of these stressors, the goal is toward prevention or reduction of stress factors which either affect or could affect optimal functioning in a given client situation. This model seeks to clarify and make explicit intrapersonal, extrapersonal, and interpersonal variables. Each of these three factors includes physiological, psychological, sociocultural, and developmental variables. The interrelationship of these variables determines the nature and degree of the organism's reaction to a stressor. Sedgwick (1975) supported the importance of assessing these variables and stated that the nurse must use her knowledge and skill to assess general clinical manifestations of stress which have been found to be: reduced ability to utilize incoming information; decreased ability to think clearly and problem solve; reduced ability to master tasks; reduced ability to make

effective, constructive decisions; heightened sensitivity to self; and a decreased sensitivity to the environment. The nurse also must assess the particular individual's behavior through a knowledge of specific cultural influences and an awareness of past behavior. Scott (1977) stated that intrapersonal variables such as the meaning the event has for the individual and the coping methods being utilized must be assessed in the stress reaction. Extrapersonal factors such as stressors contributing to the stress reaction and the interpersonal variables or environmental supports must be considered. Individual stress responses are based upon hereditary, sociocultural, and developmental factors as well as individual needs and desires, and methods learned to cope with stress (Wolf and Goodell 1968). Mechanic (1976) supported this and stated the meaning of the threat and subsequent stress reaction is dependent on social values, the acceptance of cultural definitions of what is valuable, and the methods of coping utilized which reflect one's past learning and experiences in dealing with similar threats.

After assessing these variables, an individual plan of care may be made. Rankin (1976) stated that nursing actions strive to conserve client energy, maximize existing coping behaviors, explore alternatives, and

mobilize resources to bring about an adaptive state. The ultimate goal is alleviation of the stress state. The nurse can give direction to the client by providing specific information, facilitating their ability to express feelings, and through supportive measures. The nurse can provide information on alternative coping methods and help the client test new coping behaviors. The nurse might intervene and attempt to help the client make a decision, change a goal, or support decisions he is able to make on his own. Mobilization of resources that can provide support to the individual's coping attempts are also important in helping him conserve energy and adapt. Resources may include: (1) intrapersonal, such as drawing on past experiences; (2) extrapersonal, such as environmental or agency supports; and (3) interpersonal, such as support from family, friends, and other individuals including the nurse. In essence, the nurse provides resources to assist the individual to reorganize, decreasing the disorganization that leads to poor functioning ability and eventual exhaustion. Hopefully, the individual will learn to recognize resources, stressful stimuli to avoid when possible, and utilize more effective coping methods in the future.

Stress and adaptation theory is vital in guiding the nursing process in caring for the trauma patient involved in a motor vehicle accident. Haddon (1968) stated that a transition is occurring in the approach to trauma. Instead of just treating the results of such trauma, a new look is being taken at its etiology. There is increasing evidence of a relationship between accidents and the individual's changing stressful environment. Stainbrook (1970) supported this by stating that a comprehensive medical and surgical response to trauma involved not only the technical practices for somatic repair and for the reduction of biological impairment, but also an analysis of why the trauma-producing behavior happened. This knowledge about the identifiable determinants of injury can inform nursing more resourcefully of interventions which might be effective in primary, secondary, and tertiary prevention. Schulzinger (1956) concluded that individuals whose wounds were treated but whose psychosocial problems were ignored or neglected were more likely to develop a neurosis and experience more accidents.

Summary

Much research has been conducted on vehicle accident causation, and yet no coherent theory has emerged.

More recently, research in this area has turned to the possible role of transient variables. Life change is one transient variable that has been positively correlated to accidents. The general response to stress helps to explain the relationship of life change to accident. The key mediating factors in the stress response have been shown to be cognitive appraisal and the coping methods utilized by the individual. It is the cognitive appraisal which differentiates a stressor from a stimulus and determines the subsequent coping methods mobilized. These two processes determine the nature of the stress reaction. Understanding and incorporating the concepts of stress and adaptation into nursing practice is vital in implementing the nursing process.

CHAPTER III

PROCEDURE FOR COLLECTION OF DATA

This study was a descriptive study as defined by Abdellah and Levine (1965) which utilized a descriptive survey source of data collection. This study was undertaken to determine if short or long-term coping methods are utilized by drivers involved in motor vehicle accidents.

Setting

The setting for this study was an 800-bed city-county teaching hospital. This institution was an acute care facility located in the Southwest and serves a major metropolitan area.

Written permission was obtained to use this institution as the setting for this study (appendix A). These agreements were received in writing before commencement of the data collection.

Population and Sample Selection

The population was composed of male and female subjects between the ages of 18 to 65 who were drivers involved in motor vehicle accidents and admitted to the hospital as a result. The subjects were in stable medical

condition, mentally capable of answering questions, and able to read English.

Written permission (appendix B) was obtained from the Texas Woman's University Human Rights Committee that they considered this study to be of a minimal risk to human participants before sample selection began. Written permission was also obtained from the Southwestern Medical School Human Research Review Committee (appendix B). Anonymity was guaranteed to each participant in the study. Only subjects who were willing to sign Texas Woman's University Form A, the Consent to Act as a Subject for Research and Investigation, after an explanation of the study was verbally given to them, were included in this study (appendix C). A brief explanation and information for completing the tool accompanied it. The subject was given an opportunity to ask any questions regarding the study. The subject was informed that withdrawal from the study could occur at any time.

Convenience sampling technique (Abdellah and Levine 1965) was utilized for selection of the sample. A sample of thirty-five subjects was included in the study.

Tool

The tool that was used in this study was an eighteen item questionnaire developed by Bell (1975) to obtain information regarding individual coping methods (appendix D). Following a review of the literature, Bell identified several independent ways of coping with stress and these strategies were included in the questionnaire (Menninger 1963; Sidle et al. 1969). It is divided into seven long-term and eleven short-term methods based on the reality-oriented, constructive effect each has in dealing with stress for a long duration of time (appendix D).

Originally, Bell (1975) administered the tool to thirty psychiatric inpatients and a control group of thirty mentally well subjects. The experimental group reported that significantly more short-term coping methods had been used when compared to the control group. Permission was obtained from Bell to use her tool in this study (appendix D).

The tool was designed as a self-rating scale with items of never, seldom, sometimes, usually, and always. The point circled by the subject on the questionnaire served as his rating for that method. Sidle et al. (1969), in a preliminary study for developing a coping scale,

obtained results which indicated that a paper-and-pencil test is capable of eliciting information about coping.

Data Collection

The collection of data was done in the hospital setting at the bedside. The subjects who met the criteria, and who were in stable medical condition and mentally capable of answering questions were selected. The subject was approached and given a brief explanation of the study (appendix C) and asked to participate in the study. If the subject agreed, Form A, Consent to Act as a Subject for Research and Investigation, was signed (appendix C). The Bell Coping Scale Questionnaire (1975) (appendix D) was then administered. The questionnaire took approximately five minutes to complete. In addition to the stated tool, demographic data were collected on each subject. Age, sex, race, and diagnosis were included, whether intoxicated at the time of the accident, and whether they had been involved in previous accidents as a driver (appendix D).

Treatment of Data

Upon completion of data collection, the data were treated by interpretation and presentation in a narrative and appropriate tables. Frequency counts were obtained on demographic data. Age was summarized for the group with

computation of the mean and the range. Percentages were computed for each coping method reported by the group and compared. Percentages were compared following computation of the coping methods reported by the different demographic groups. A comparison of the reported proportion of short-term coping methods to the reported proportion of long-term coping methods was made utilizing the Wilcoxon Matched Pairs signed-rank test (Runyon and Habor 1976). It was determined that the T value would be significant at the 5 percent level.

The categories of sometimes, usually, and always were considered in analysis of the data. Additional analysis was done to determine differences between variables from the demographic data. The Mann Whitney-U test with a correction for ties (Siegel 1956) was utilized to determine whether there was a significant difference in the amount of long or short-term coping methods reported by the two independent sex groups and the two groups consisting of subjects who had been involved as drivers in previous accidents and those who had not. It was determined that the p values obtained would be significant at the 5 percent level. The Kruskal-Wallis one-way analysis of variance with a correction for ties (Siegel 1956) was utilized to determine whether there was a significant difference in the amount

of long or short-term coping methods reported by the three age groups and three racial groups.

Summary

In this chapter, the methodology employed to gather information concerning coping methods of drivers involved in motor vehicle accidents has been presented. The setting, population and sample selection, description of tool, data collection, and treatment of data were discussed.

CHAPTER IV

ANALYSIS OF DATA

This descriptive study sought to determine if short or long-term coping methods were utilized by drivers involved in motor vehicle accidents. This chapter includes the results and interpretations of the findings and the statistics used to analyze the data.

The analysis of data was conducted according to the following purposes:

1. To identify short and long-term coping methods utilized by drivers involved in motor vehicle accidents

2. To determine if short or long-term coping methods are more predominant.

Characteristics of the Sample

The sample consisted of thirty-five drivers involved in motor vehicle accidents and admitted to the hospital as a result. Ages ranged from 18 to 57 and included twenty-six males and nine females. The mean age was 30 years. Sixty-six percent were 30 years of age or younger, 23 percent were 31 to 45, and 11 percent were 46 to 57. Sixty percent were Caucasian, 26 percent were Black, and 14

percent were Latin American. Forty-nine percent had been involved as drivers in previous motor vehicle accidents (table 1).

TABLE 1

DEMOGRAPHIC DATA

Subject	Age	Sex	Race	Involvement in Previous Accidents as a Driver
1	18	M	LA	No
2	34	M	B	No
3	22	F	LA	No
4	29	M	C	Yes
5	20	M	C	Yes
6	20	F	C	No
7	20	M	C	No
8	36	M	B	No
9	21	M	C	No
10	24	M	C	Yes
11	57	M	B	Yes
12	25	M	C	Yes
13	23	M	B	Yes
14	42	F	B	Yes
15	57	M	C	No
16	36	F	B	No
17	22	M	C	Yes

TABLE 1 (continued)

Subject	Age	Sex	Race	Involvement in Previous Accidents as a Driver
18	23	M	C	No
19	18	M	C	No
20	31	M	B	Yes
21	28	F	C	No
22	19	M	C	Yes
23	44	M	C	No
24	27	F	C	Yes
25	40	M	LA	Yes
26	56	M	C	Yes
27	43	M	C	Yes
28	45	F	C	No
29	20	M	LA	No
30	44	M	C	No
31	24	F	C	No
32	20	M	B	Yes
33	24	M	C	Yes
34	22	M	B	Yes
35	20	F	LA	No

LA = Latin American

B = Black

C = Caucasian

Presentation of Findings

Itemization of the raw data indicated the various percentages of the sample reporting each method (table 2).

TABLE 2

COMPARISON OF PERCENTAGES USING EACH COPING METHOD

Coping Method	Sometimes	Usually	Always	Total Percentage Using Item
Long-Term Methods				
1. Talk it out with others	.31	.23	.12	.66
2. Find out more about situation	.31	.31	.24	.86
3. Belief in supernatural power	.03	.06	.42	.51
4. Work off by exercise	.22	.06	.06	.34
5. Take definite action	.37	.23	.11	.71
6. Draw on past experience	.34	.26	.17	.77
7. Make alternate plan	.49	.26	.11	.77
Short-Term Methods				
1. Use alcoholic beverages	.40	.20	.03	.63
2. Daydream	.31	.14	.12	.57
3. See humor of situation	.42	.06	.21	.69
4. Don't worry about it	.34	.26	.20	.80
5. Sleep more	.37	.06	.06	.49
6. Use food and food substitute	.26	.20	.14	.60

TABLE 2--Continued

Coping Method	Sometimes	Usually	Always	Total Percentage Using Item
Short-Term Methods				
7. Prepare to expect the worse	.37	.31	.06	.74
8. Curse	.31	.34	.11	.76
9. Use drugs	.29	.02	-0-	.31
10. Involved in other activities	.49	.17	.03	.69
11. Cry	.31	.14	.09	.54

Categories of sometimes, usually, and always were considered in the analysis of data. The coping method most frequently reported by the sample was the long-term method of "finding out more about the situation." Other coping methods reported by 75 percent or more of the sample were the long-term coping methods of "drawing on past experience" and "making alternative plans." The most frequently identified short-term methods were "not worrying about it" and "cursing." The remaining coping methods except for two were reported by 50-75 percent of the sample. These findings would suggest that these methods are relatively independent ways of coping with stress utilized at some time by the majority of individuals.

The two exceptions were the long-term method of "working off by physical exercise" and the short-term method of "using drugs" which were reported by less than 50 percent of the sample. The method "working off by physical exercise" could possibly have been misconstrued and taken literally rather than interpreted for its actual meaning. This particular item is not felt to have much face validity. The method "using drugs" may not have been reported in all cases due to social disapproval of this method.

For evaluating the data collected to determine if short or long-term coping methods were more predominantly chosen, the Wilcoxon matched pairs signed-rank test (Runyon and Habor 1976) was utilized. Scores for each subject were obtained by doing a frequency count of the number of long-term methods reported and the number of short-term methods reported (table 3). Since the number of items of short and long-term coping methods were not equal on the tool (appendix D), the scores for each method were transformed to proportions by dividing each score by the number of items identified in each respective category (eleven short-term and seven long-term). The next step was to find the difference between these two proportions and then rank the absolute values of the differences. The statistic T was

TABLE 3

COMPARISON OF LONG-TERM AND SHORT-TERM COPING METHODS

Subject	#ST*	#LT**	%ST***	%LT****	Subject	#ST*	#LT**	%ST***	%LT****
1	10	4	.90	.57	19	4	4	.36	.57
2	3	5	.27	.71	20	10	5	.90	.71
3	4	7	.36	100.00	21	8	4	.73	.57
4	10	4	.90	.57	22	10	5	.90	.71
5	7	6	.64	.86	23	4	1	.36	.14
6	3	7	.27	100.00	24	9	4	.82	.57
7	8	5	.73	.71	25	6	7	.56	100.00
8	8	4	.73	.57	26	5	4	.45	.57
9	7	4	.64	.57	27	5	5	.45	.71
10	10	7	.90	100.00	28	6	6	.56	.86
11	8	5	.73	.71	29	4	6	.36	.86
12	10	4	.90	.57	30	5	4	.45	.57
13	9	4	.82	.57	31	6	5	.56	.71
14	9	5	.82	.71	32	5	4	.45	.57
15	6	4	.56	.57	33	8	4	.73	.57
16	3	2	.27	.29	34	7	7	.64	100.00
17	6	4	.56	.57	35	9	4	.82	.75
18	9	6	.82	.86					

*#ST--Refers to the number of short-term methods reported.
**#LT--Refers to the number of long-term methods reported.
***#ST--Refers to the proportion of short-term methods reported of the eleven possible.
****#LT--Refers to the proportion of long-term methods reported of the seven possible.

obtained by adding the sum of the signed ranks with the smaller sum which was +291. A statistic T of 195 or less was required to show significance at the .05 level using a two-tailed test. Since the T score of +291 is greater than 195, it can be concluded that there is no significant difference in predominance of long or short-term coping methods reported by drivers involved in motor vehicle accidents.

Additional analysis was done to determine differences between variables from the demographic data. Each subject was classified according to the six variables--age, sex, race, diagnosis, blood alcohol level at time of accident, and involvement in previous accidents as a driver. Diagnosis and blood alcohol level were not retained for the analysis since diagnosis was not felt to have a relation to the variable being studied and blood alcohol levels were not obtained.

The Mann Whitney-U test with a correction for ties (Siegel 1956), was utilized to determine whether there was a difference in the amount of long and short-term coping methods reported by the two independent groups of those subjects who had been involved as drivers in previous accidents and those who had not. Table 4 shows the difference in mean socres for short and long-term coping methods and

TABLE 4

COMPARISON OF MEANS

	N = 17 Previously Involved as Driver	N = 18 Not Previously Involved as Driver
Mean for S.T. Methods	7.9	6
Mean for L.T. Methods	4.9	4.6

compares the above two groups. The Mann Whitney-U analysis indicated a $p < .008$ which was significant at Alpha .01, the 1 percent level. This indicated that the group who had previously been involved as drivers in motor vehicle accidents reported significantly more short-term coping methods than the group who had never been involved previously as drivers in motor vehicle accidents. Analysis for reporting long-term methods indicated a $p = .18$ or no significant difference. Table 5 compares percentages of these two groups for each coping method. Noticeable differences between the two groups are "use of alcoholic beverages," "see humor of situation," "use food and food substitutes," "prepare to expect the worst," "curse," and "involved in other activities." The group involved previously as drivers in motor vehicle accidents reported these short-term coping methods considerably more than the other group.

TABLE 5

COMPARISON OF PERCENTAGE USING COPING METHODS

Coping Method	N = 17 Previously Involved in MVA as Driver				N = 18 Not Previously Involved in MVA as a Driver			
	Sometimes	Usually	Always	Total	Sometimes	Usually	Always	Total
Short Term Methods:								
1. Use alcoholic beverages	.59	.11	.06	.76	.22	.28	-0-	.50
2. Daydream	.41	.18	.06	.65	.28	.17	.11	.56
3. See humor of situation	.65	-0-	.18	.83	.28	.11	.22	.61
4. Don't worry about it	.53	.24	.12	.89	.22	.28	.28	.78
5. Sleep more	.41	.06	-0-	.47	.33	.06	.11	.50
6. Use food and food substitutes	.47	.24	.12	.83	.11	.17	.17	.45
7. Prepare to expect worst	.35	.47	-0-	.82	.33	.22	.11	.66
8. Curse	.29	.47	.12	.88	.33	.22	.06	.61
9. Use drugs	.29	.06	-0-	.35	.28	-0-	-0-	.28
10. Involved in other activities	.71	.18	.06	.95	.33	.17	-0-	.50
11. Cry	.41	.12	.06	.59	.22	.22	.11	.55
Long-Term Methods:								
1. Talk it out with others	.24	.35	.12	.71	.33	.11	.11	.55
2. Find out more about situation	.29	.41	.24	.94	.39	.28	.28	.95
3. Belief in supernatural power	.06	.12	.24	.42	-0-	.06	.61	.67
4. Work off by exercise	.35	.06	.12	.53	.22	-0-	-0-	.22
5. Take definite action	.47	.24	.12	.83	.28	.22	.17	.67
6. Draw on past experience	.41	.35	.18	.94	.33	.22	.17	.72
7. Make alternate plans	.29	.41	.06	.76	.50	.17	.17	.84

This would raise the question that perhaps coping methods utilized by an individual may be one variable to consider in the high accident rate driver.

Table 6 shows the difference in mean scores for short and long-term coping methods between men and women. The Mann Whitney-U test analysis indicated a p = .2 or no significant difference between the two groups in reporting short-term methods and a p = .3 or no significant difference between the two groups in reporting long-term methods.

TABLE 6

COMPARISON OF MEANS

	N = 26 Men	N = 9 Women
Mean for S.T. Methods	7	6.3
Mean for L.T. Methods	4.6	4.8

The Kruskal-Wallis one-way analysis of variance with a correction for ties (Siegel 1956) was utilized in analyzing the data for the three age groups and three racial groups. Table 7 shows the mean scores for short and long-term coping methods for the age groups. Kruskal-Wallis analysis indicates a p = .2 or no significance between the age groups in reporting short-term methods

and a p = .9 or no significance between the age groups in reporting long-term methods.

TABLE 7

COMPARISON OF MEANS

	18-30 years of age	31-45 years of age	46-65 years of age
Mean for S.T. Methods	7.4	5.9	6.3
Mean for L.T. Methods	4.9	4.4	4.3

Table 8 compares mean scores for the racial groups. Kruskal-Wallis analysis indicated a p = .3 or no significant difference between the racial groups in reporting short term methods and a p = .8 or no significant difference for reporting of long-term methods.

TABLE 8

COMPARISON OF MEANS

	Latin Americans	Blacks	Caucasians
Mean for S.T. Methods	7.2	7	6.9
Mean for L.T. Methods	5.2	4.8	4.6

The preceding analysis on demographic data indicated that sex, sociocultural, and developmental differences did not significantly influence the amount of short or long-term

coping methods reported between the groups. Table 9 compares percentages of men and women for each coping method. There is a noticeable difference in several of the coping methods. More men "find out more about the situation," "work off by exercise," "curse," and "make alternate plans" while more women cope by "day dreaming," "using food and food substitutes," "becoming involved in other activities," and "crying."

Table 10 compares percentages of age groups for each coping method. Noticeable differences can be seen. The 46-65 age group reported the following coping methods more frequently than the other two groups: (1) "using alcoholic beverages," (2) "not worrying about it," (3) "drawing on past experiences," and (4) "crying." They reported considerably less frequently the coping method of "becoming involved in other activities." The 31-45 age group revealed differences by reporting "daydreaming" and "cursing" less and "belief in a supernatural power" more frequently than the other two age groups. The 18-30 age group reported the following methods more frequently than the other groups: (1) "talking it out," (2) "finding out more about the situation," (3) "daydreaming," (4) "seeing the humor in the situation," and (5) "using drugs."

TABLE 9

COMPARISON OF PERCENTAGE USING COPING METHODS BY SEX

Coping Method	N = 9 Women Sometimes	Usually	Always	Total	N = 26 Men Sometimes	Usually	Always	Total
Short-Term Methods:								
1. Use alcoholic beverages	.35	.23	.04	.62	.55	.11	-0-	.66
2. Daydream	.38	.15	.11	.64	.11	.22	-0-	.33
3. See humor of situation	.38	.04	.23	.65	.55	.11	.11	.77
4. Don't worry about it	.31	.27	.19	.77	.55	.11	.22	.88
5. Sleep more	.38	.08	.04	.50	.33	-0-	.11	.44
6. Use food and food substitute	.31	.23	.23	.77	.44	-0-	.11	.55
7. Prepare to expect worst	.31	.35	.07	.73	.33	.33	-0-	.66
8. Curse	.31	.23	.11	.65	.44	-0-	.44	.89
9. Use drugs	.27	.04	-0-	.31	.33	-0-	-0-	.33
10. Involved in other activities	.55	.33	-0-	.88	.46	.11	.04	.61
11. Cry	.07	.35	.35	.77	.33	.11	.11	.55
Long-Term Methods:								
1. Talk it out with others	.35	.15	.11	.61	.11	.44	-0-	.55
2. Find out more about situation	.27	.38	.23	.78	.44	.33	.22	.99
3. Belief in supernatural power	-0-	.08	.46	.54	.11	.11	.33	.55
4. Work off by exercise	.27	-0-	.08	.35	.44	.11	-0-	.55
5. Take definite action	.35	.23	.15	.73	.55	.22	-0-	.77
6. Draw on past experience	.27	.31	.23	.81	.55	.22	-0-	.77
7. Make alternate plans	.38	.19	.15	.72	.33	.44	-0-	.77

TABLE 10

COMPARISON OF PERCENTAGE USING COPING METHODS BY AGE GROUPS

	N = 23 Age 18-30				N = 8 Age 31-45				N = 4 Age 46-65			
Coping Method	Sometimes	Usually	Always	Total	Sometimes	Usually	Always	Total	Sometimes	Usually	Always	Total
Short-Term Methods:												
1. Use alcoholic beverages	.52	.10	-0-	.62	.25	.25	.13	.63	.25	.50	-0-	.75
2. Daydream	.39	.26	.13	.78	.25	-0-	-0-	.25	.50	-0-	-0-	.50
3. See humor of situation	.48	.09	.22	.79	.38	-0-	.25	.63	.50	-0-	-0-	.50
4. Don't worry about it	.43	.22	.17	.82	.25	.25	.25	.75	.50	.25	.25	100
5. Sleep more	.39	.09	-0-	.48	.38	-0-	.13	.51	.25	-0-	.25	.50
6. Use food and food substitutes	.35	.13	.17	.65	-0-	.50	.13	.63	.50.	-0-	-0-	.50
7. Prepare to expect worst	.43	.30	.04	.77	.25	.38	-0-	.63	-0-	.50	.25	.75
8. Curse	.35	.43	.04	.82	-0-	.25	.25	.50	.75	-0-	-0-	.75
9. Use drugs	.30	.04	.04	.38	.25	-0-	-0-	.25	.25	-0-	-0-	.25
10. Involved in other activities	.57	.17	.04	.78	.50	.25	-0-	.75	.25	-0-	-0-	.25
11. Cry	.30	.26	.09	.65	.50	-0-	-0-	.50	.25	.25	.25	.75
Long-Term Methods:												
1. Talk it out with others	.26	.35	.13	.74	.25	.25	.13	.63	.25	-0-	.25	.50
2. Find out more about situation	.43	.35	.22	100	.25	.25	.38	.88	-0-	.25	.50	.75
3. Belief in supernatural power	.04	.09	.39	.52	-0-	.13	.50	.63	-0-	-0-	.50	.50
4. Work off by exercise	.43	.04	.04	.51	.25	-0-	.13	.38	.25	.25	-0-	.50
5. Take definite action	.43	.22	.09	.74	.25	.38	.13	.76	.25	.25	.25	.75
6. Draw on past experience	.48	.22	.17	.87	12.5	.63	12.5	.88	.50	.25	.25	100
7. Make alternate plans	.39	.35	.09	.83	.50	.25	.13	.88	.25	.25	.25	.75

Table 11 compares percentages of racial groups for each coping method. Latin Americans reported the long-term methods "talking it out," and "making alternate plans," and the short-term method "prepare to expect the worst" less frequently than the other two races. They reported the short-term method of "using food and food substitutes" more frequently. Blacks reported the following long-term methods less often than the other two races: "working off by exercise," "taking definite action," and "drawing on past experiences." They also reported less often the short-term methods of "using alcoholic beverages" and "cursing." The Caucasian group reported less often the short-term methods of "seeing humor," "not worrying about it," "sleeping more," and "crying" than the other two races. They reported "using drugs" more frequently. The above would indicate that although there is not a significant difference in the predominant use of short-term coping methods between groups or long-term methods either, that these variables may be particularly important in coping styles.

Summary

This chapter has presented the results and interpretations of the findings of this study. Itemization of the raw data and percentages of each coping method were done.

TABLE 11

COMPARISON OF PERCENTAGE USING COPING METHODS BY RACE

Coping Method	N = 21 Caucasian				N = 5 Latin American				N = 8 Black			
	Sometimes	Usually	Always	Total	Sometimes	Usually	Always	Total	Sometimes	Usually	Always	Total
Short-Term Methods:												
1. Use alcoholic beverages	.48	.19	.05	.72	.40	.40	-0-	.80	.25	.13	-0-	.38
2. Daydream	.38	.14	.10	.62	-0-	.40	-0-	.40	.25	.13	.25	.63
3. See humor of situation	.48	-0-	.14	.62	.60	.20	-0-	.80	.38	.13	.38	.89
4. Don't worry about it	.33	.29	.10	.72	.60	.20	-0-	.80	.38	-0-	.50	.88
5. Sleep more	.38	.05	-0-	.43	.60	-0-	-0-	.60	.25	.13	.25	.63
6. Use food and food substitutes	.33	.24	.10	.67	.60	.20	.20	100	.13	.13	.13	.39
7. Prepare to expect worst	.29	.43	.05	.77	.40	.20	-0-	.60	.50	.13	.13	.76
8. Curse	.38	.29	.14	.81	.20	.60	-0-	.80	.13	.25	.13	.51
9. Use drugs	.33	.05	-0-	.38	.20	-0-	-0-	.20	.25	-0-	-0-	.25
10. Involved in other activities	.52	.19	.05	.76	.60	.20	-0-	.80	.38	.13	-0-	.51
11. Cry	.33	.10	.10	.53	.20	.40	-0-	.60	.38	.25	.13	.76
Long-Term Methods:												
1. Talk it out with others	.24	.33	.10	.67	.40	-0-	-0-	.40	.38	.13	.13	.64
2. Find out more about situation	.38	.33	.29	100	.40	.50	-0-	.90	.25	37.5	37.5	100
3. Belief in supernatural power	.05	.10	.38	.53	-0-	.20	.20	.40	-0-	-0-	.50	.50
4. Work off by exercise	.33	.10	.05	.48	.40	-0-	.20	.60	.13	-0-	-0-	.13
5. Take definite action	.38	.33	.10	.81	.80	-0-	-0-	.80	.25	.25	.13	.63
6. Draw on past experience	.48	.33	.14	.95	.60	.20	-0-	.80	.13	.25	.25	.63
7. Make alternate plans	.43	.29	.10	.82	.40	.20	-0-	.60	.25	.38	.13	.76

The coping method most reported by the sample was "finding out more about the situation." It was determined that all but two of the coping methods were identified by more than 50 percent of the subjects and that, therefore, it was concluded that these methods are relatively independent ways of coping with stress used at some time by the majority of individuals. There was no significant difference found using the Wilcoxon matched pairs signed-rank test in predominance of long or short-term coping methods reported by the group. Additional analysis was done to determine differences between variables from the demographic data. The Mann-Whitney U analysis showed that subjects who had previously been involved as drivers in motor vehicle accidents utilized significantly more short-term coping methods than subjects who had not. No significant difference was found between the sex, sociocultural, and age groups. Percentages for reporting each method were compared for each group. Some differences were noted which would indicate that these variables may be particularly important in coping styles.

CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

This chapter contains the summary, a discussion of the conclusions, and implications that were derived from this descriptive study that examined coping methods utilized by drivers involved in motor vehicle accidents. Recommendations for further study are also included.

Summary

A review of the literature indicated that both clinical observation and systematic research have not focused on ways in which people cope. This was a descriptive study which sought to determine if short or long-term coping methods are utilized by drivers involved in motor vehicle accidents. The purposes of the study were to: (1) identify short and long-term coping methods utilized by drivers involved in motor vehicle accidents, and (2) determine if short or long-term coping methods are more predominant.

The setting was an 800-bed teaching hospital. This institution is a county, acute care facility located in the Southwest.

The population consisted of twenty-six male and nine female subjects between the ages of 18 and 65 years

of age who were drivers involved in motor vehicle accidents and admitted to the hospital as a result. Convenience sampling was utilized.

Data were collected by the utilization of the Bell Coping Scale to obtain information regarding individual coping methods. The subjects were asked to rate themselves on a scale of one to five (never to always) as to their likelihood of using each method when feeling stress. The last three categories of sometimes, usually, and always were considered in analysis of the data.

Itemization of the raw data indicated the percentages of the sample reporting each method. All methods except two were reported by 50 percent or more of the sample indicating that these are relatively independent methods of coping used at some time by the majority of individuals to cope with stress. The coping method most reported by the group was "finding out more about the situation." Other coping methods reported by 75 percent or more of the sample were the long-term coping methods of "drawing on past experience" and "making alternate plans" and the short-term methods of "not worrying about it" and "cursing."

Statistical analysis indicated no significant difference in predominance of long or short-term coping methods reported by drivers involved in motor vehicle

accidents. Additional analysis was done to determine differences between variables from the demographic data. It was found that those subjects who had been involved as drivers in previous motor vehicle accidents reported significantly more short-term coping methods than the group who had never been involved previously as drivers in motor vehicle accidents. No significant difference was found between the sex, race, and age groups. Percentages for reporting each method were compared for each group. Some noticeable differences were noted which would indicate that these variables may be particularly important in coping styles.

Conclusions

Evaluation of the collected data indicated that the Bell Coping Scale represents relatively independent methods of coping with stress utilized by a majority of individuals at some time. This supports the literature utilized by Bell (1975) in identifying independent ways of coping and the validity of their use. In reflecting on the tool, it would appear that it was not designed to measure the difference in predominance of long or short-term coping methods within a single group due to the fact that there was an uneven number of items and that the

methods are utilized by a majority of individuals at some time. The tool in its present form could be better utilized to measure the difference in coping methods between groups.

Secondly, there was no significant difference in predominance of long or short-term coping methods reported by drivers involved in motor vehicle accidents. It was found, however, that subjects who had been involved as drivers in previous accidents utilized significantly more short-term coping methods than subjects who had not. This raises the question that perhaps coping methods an individual utilizes may be a variable to consider in the high rate accident driver. This supports the theory that utilization of short-term coping methods results in disequilibrium that could result in a motor vehicle accident.

Finally, some differences, although not significant, were noted between sex, race, and age groups which indicated that these variables may be particularly important in coping styles. This supports the literature which states that sociocultural, developmental, and sex differences are important factors in determining the methods an individual chooses to cope with stress (Wolf and Goodell 1968).

Implications

Based on the findings of this study, the following are implications for nursing practice, nursing education, and nursing research:

Although significance was not shown between reporting of short or long-term coping methods for this group, it was shown that subjects involved as drivers in previous accidents utilized significantly more short-term coping methods than subjects who had not. This raises the question that perhaps coping methods an individual utilizes may be one variable to consider in the high rate accident driver. This implies the importance for the nurse to assess her client regarding involvement and role in previous accidents. The nurse should assess coping methods her client is utilizing and help in planning alternate coping methods.

Also, since some differences were found in coping methods utilized between sex, race, and age groups, the following implication for nursing is given. Nurses should assess developmental level and have knowledge of the effect this variable could have on coping styles utilized. The nurse should also possess a knowledge of specific cultural and sex influence on coping styles.

"Finding out more about the situation," "making alternate plans," and "drawing on past experiences" were long-term methods reported by 75 percent or more of the group. The nurse could aid her clients in coping by supplying information and encouraging her clients to ask questions. The nurse could aid her client in making alternate plans when previous plans are disrupted by an injury or illness. The nurse could assess her clients as to past experience that might aid them in coping with the present situation.

This study has implications for instructors of nursing. In planning total patient care, nursing students need to be aware of variables such as stress and coping that may have contributed to the accident.

Implications for nurse researchers are to continue to look at methods of coping which may be one variable influencing accident causation. To carry out effective primary, secondary, and tertiary prevention, we must have an analysis based upon theory as to why trauma producing behavior occurred.

Recommendations

The following recommendations are offered as possible studies related to the findings of this study:

1. A descriptive-comparative study utilizing an experimental group of drivers involved in motor vehicle accidents and a matched control group consisting of individuals who had never been involved as drivers in accidents to determine if there is any significant difference between the two groups in reporting of long or short-term coping methods

2. A descriptive-comparative study utilizing a larger sample of subjects who had been involved as drivers in more than one accident and a matched control group to determine if there is a significant difference between long or short-term coping methods reported by each group

3. Exploration as to whether certain personalities use common coping methods. Tools such as the Minnesota Multiple Personality Inventory and State-trait inventories could be utilized to ascertain if personality traits identified in high accident rate drivers compare with common coping methods

4. Methods for acquiring more reliable and valid data on coping need to be considered

5. An exploratory study to determine "real coping." Actual behavior could be observed in a stressful situation rather than obtaining theoretical information through paper and pencil methods

6. More descriptive-comparative studies on variables such as sex, age, and sociocultural effects upon coping strategies

APPENDIX A

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE Parkland Memorial Hospital

GRANTS TO Susan G. Cunningham

a student enrolled in a program of nursing leading to a Masters Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem:

COPING METHODS UTILIZED BY DRIVERS INVOLVED IN MOTOR VEHICLE ACCIDENTS: NURSING IMPLICATIONS

The conditions mutually agreed upon are as follows:

1. The agency (may) (~~may not~~) be identified in the final report.
2. The names of consultative or administrative personnel in the agency (may) (~~may not~~) be identified in the final report.
3. The agency (~~wants~~) (does not want) a conference with the student when the report is completed.
4. The agency is (willing) (~~unwilling~~) to allow the completed report to be circulated through interlibrary loan.
5. Other: _____

Date 7/20/78

Signature of Faculty Advisor

Susan G. Cunningham
Signature of student

Signature of Agency Personnel 7-20-78

*Fill out and sign three copies to be distributed as follows: Original - Student; first copy - agency; second copy - _____ University.

APPENDIX B

TEXAS WOMAN'S UNIVERSITY

Human Research Committee

Name of Investigator: Susan Gay Cunningham Center: Dallas

Address: 4810 B, Bradford Dr. Date: July 12, 1978

Dallas, Texas 75219

Dear Ms. Cunningham:

Your study entitled Coping Methods Utilized by Drivers Involved in Motor Vehicle Accidents--Nursing Implications has been reviewed by a committee of the Human Research Review Committee and it appears to meet our requirements in regard to protection of the individual's rights.

Please be reminded that both the University and the Department of Health, Education and Welfare regulations require that written consents must be obtained from all human subjects in your studies. These forms must be kept on file by you.

Furthermore, should your project change, another review by the Committee is required, according to DHEW regulations.

Sincerely,

Geraldine M Gosser

Chairman, Human Research Review Committee at Dallas.

THE UNIVERSITY OF TEXAS
HEALTH SCIENCE CENTER AT DALLAS

DEPARTMENT OF PHARMACOLOGY

SOUTHWESTERN MEDICAL SCHOOL
GRADUATE SCHOOL OF BIOMEDICAL SCIENCES
SCHOOL OF ALLIED HEALTH SCIENCES

July 5, 1978

Susan G. Cunningham
Department of Nursing

Dear Ms. Cunningham:

A subcommittee of the Human Research Review Committee has made a preliminary review of your study and it appears to meet our requirements in regard to protection of the individual's rights, experimental design, informed consent, etc. The title of this study is "Coping Methods Utilized By Drivers Involved in Motor Vehicle Accidents: Nursing Implications."

The full committee will meet on July 10, 1978 to review your request, at which time approval by the Committee is anticipated. Following that review, you will receive written notification of our action. No research activity can begin on this study until final approval has been received from the full Committee.

HEW regulations require you to submit annual and terminal progress reports to our Human Research Review Committee and to receive at least annual approval of your activity by this Committee. You are also required to report to this committee any death or serious reactions resulting from your study. Failure to submit the above reports may result in severe sanctions being placed on the Health Science Center.

You are reminded that all grant applications and any solicitation of funds must be processed through the office of Grants Management and Development. Funds received as a result of an application having been submitted directly to a granting agency by a faculty member will not be accepted by the institution.

Sincerely,

Andres Goth, M.D.
Chairman
Human Research Review Committee

kj

5323 HARRY HINES BLVD. DALLAS, TEXAS 75235 (214) 688-2266

THE UNIVERSITY OF TEXAS
HEALTH SCIENCE CENTER AT DALLAS

RTMENT OF PHARMACOLOGY

SOUTHWESTERN MEDICAL SCHOOL
GRADUATE SCHOOL OF BIOMEDICAL SCIENCES
SCHOOL OF ALLIED HEALTH SCIENCES

July 10, 1978

Susan G. Cunningham
Department of Nursing

Dear Ms. Cunning ham:

The Human Research Review Committee has approved your request for a study entitled "Coping Methods Utilized By Drivers Involved in Motor Vehicle Accidents: Nursing Implications." The Committee asks that a few revisions be made on your study.

1. The title o f the study and investigator's name should be on the lay summary and consent form.

2. The consent form must mention that the patient has the right not to participate or to withdraw from the study at any time without jeopardizing any further medical care. This medical/legal requirement is for your protection, the protection of the institution, and the protection of rights of the research subject.

3. The Committee also recommends that if a patient indicates a need for professional help you will refer them to such help.

The Committee asked me to remind you that both the University and the Department of Health, Education and Welfare regulations require that written consents must be obtained from all human subjects in your studies. Informed consent can only be obtained by the principal investigator or co-investigators listed in your protocol. These consent forms must be kept on file for a period of three years past completion or discontinuation of the study and will no doubt be subject to inspection in the future.

HEW regulations require you to submit annual and terminal progress reports to our Human Research Review Committee and to receive at least annual approval of your activity by this Committee. You are also required to report to this committee any death or serious reactions resulting from your study. Failure to submit the above reports may result in severe sanctions being placed on the Health Science Center.

5323 HARRY HINES BLVD. DALLAS, TEXAS 75235 (214) 688-2266
TEX-AN 833-2266

Furthermore, we have been directed to review any change in your research activity. In other words, should your project change, another review by the Committee is required.

You are reminded that all grant applications and any solicitation of funds must be processed through the office of Grants Management and Development. Funds received as a result of an application having been submitted directly to a granting agency by a faculty member will not be accepted by the institution.

Sincerely,

Andres Goth, M.D.
Chairman
Human Research Review Committee

kj

July 17, 1978

Andres Goth, M.D.
Chairman
Human Research Review Committee

Dear Dr. Goth:

We have reviewed the suggestions made by your committee regarding our studies entitled "Life Change Events of Drivers Involved in Traffic Accidents: Nursing Implications," and "Coping Methods Utilized by Drivers Involved in Motor Vehicle Accidents: Nursing Implications." We hope that the revised attached consent form will meet your requirements.

Conferences have been held with the Chaplain's assistants and the Psychiatric liaison nurse at Parkland regarding referral of patients for professional help upon their request.

The name of the faculty member responsible for our studies is Geraldine Goosen who is currently an instructor in the graduate program at Texas Woman's University.

Thank you for your suggestions regarding our studies.

Sincerely,

Virginia Cardona, R.N., B.S.N.

Susan Cunningham, R.N., B.S.N.

APPENDIX C

TEXAS WOMAN'S UNIVERSITY

(Form A -- Written presentation to subject)

Consent to Act as a Subject for Research and Investigation:

(The following information is to be read to or read by the subject)

1. I hereby authorize Susan Cunningham
(Name of person who will perform procedure or investigation)

to perform the following procedure or investigation:

(Describe in detail)

The title of the study is: COPING METHODS UTILIZED BY DRIVERS INVOLVED IN MOTOR VEHICLE ACCIDENTS: NURSING IMPLICATIONS.

The Bell Coping Scale questionnaire will be administered to each subject. This scale identifies methods you have used to cope with stress and tension in the past.

2. The procedure or investigation listed in Paragraph 1 has been explained to me by Susan Cunningham.
(Name)

3. I understand that the procedures or investigation described in Paragraph 1 involve the following possible risks or discomforts: (Describe in detail).

It may be uncomfortable for the subject to recall stressful events in the past that he/she has had to cope with. I have been fully informed though, that if I find this creates discomfort I may withdraw from the study any time before receiving, after reading, or before completing the questionnaire. Not participating in the study will not in any way jeopardize the quality of further medical care I receive here.

4. I understand that the procedures and investigations described in Paragraph 1 have the following potential benefits to myself and/or others:

Form A -- Written presentation to subject (continued)

This study will contribute to knowledge of factors which may contribute to traffic accidents and help nurses in identifying coping methods and in planning more individualized nursing care.

5. An offer to answer all of my questions regarding the study has been made. If alternative procedures are more advantageous to me, they have been explained. I understand that I may terminate my participation in the study at any time.

_____ _____

Subject's Signature Date

VERBAL EXPLANATION TO SUBJECTS PRIOR TO SIGNING OF CONSENT FORM

Hello. My name is Susan Cunningham and I am a graduate student in Nursing at Texas Woman's University. As part of the requirements for a Master's degree, I am collecting information on a subject that is of interest to me to present as a thesis. I have chosen to study the methods people use to cope with stress and tension.

I am attempting to determine the methods that drivers involved in motor vehicle accidents have used in the past to deal with stressful events and tension in their lives. By examining this area, I hope to gain more insight into factors which may contribute to traffic accidents and to learn how knowledge of the way people cope with stress can help us plan better nursing care for the individual patient.

In order to accomplish this goal, I would like to ask you to take part in my study by filling out this questionnaire which will take approximately five minutes. No names will be placed on the questionnaire at any time during the study. In addition, I do need your signature on this form. If you volunteer to participate, please read and sign this form. I do understand if you select not to participate.

If you have any questions about the study or your participation in it, I will be happy to answer them for you. Also, if at any time you feel that you do not want to further participate in the study while filling out the questionnaire, please feel free to withdraw. I hope that you will choose to be a part of my study. Thank you for your time.

APPENDIX D

BELL COPING SCALE QUESTIONNAIRE - 1975

A number of ways people react to stress and tension are given below. Please indicate your own rating on each item by circling one of the five numbers at the right of each item. Please do not skip any items. You may take as much time as necessary. There are no right or wrong answers

WHEN I AM FEELING STRESS AND TENSION:

		Never	Seldom	Sometimes	Usually	Always
1.	I use alcoholic beverages.....	1	2	3	4	5
2.	I talk it out with others (friend, relative, or professional).....	1	2	3	4	5
3.	I try to find out more about the situation	1	2	3	4	5
4.	I daydream	1	2	3	4	5
5.	I believe in a supernatural power who cares about me	1	2	3	4	5
6.	I work it off by physical exercise	1	2	3	4	5
7.	I try to see the humorous aspects of the situation	1	2	3	4	5
8.	I don't worry about it. Everything will probably work out fine	1	2	3	4	5
9.	I sleep more	1	2	3	4	5
10.	I take some definite action on the basis of my present understanding	1	2	3	4	5
11.	I draw on my past experiences	1	2	3	4	5
12.	I use food and food substitutes (smoking, chewing gum, eating more)	1	2	3	4	5

		Never	Seldom	Sometimes	Usually	Always
13.	I get prepared to expect the worst.....	1	2	3	4	5
14.	I curse	1	2	3	4	5
15.	I make several alternate plans for handling the situation.....	1	2	3	4	5
16.	I take drugs.....	1	2	3	4	5
17.	I become involved in other activities to keep my mind off the problem.....	1	2	3	4	5
18.	I cry	1	2	3	4	5

The University of Calgary
2920 24 AVE. N.W.
CALGARY, CANADA
T2N 1N4

FACULTY OF NURSING
(403) 284-6262

1978-05-02

Ms. Susan Cunningham
4810 B. Bradford Drive
Dallas, Texas 75219
U.S.A.

Dear Susan:

Permission is granted for you to use the 18 item Coping Questionnaire in your thesis with the proviso that a copy of your research be forwarded to me upon completion.

The tool is being used in similar students by 5 researchers in Illinois, New York, Pennsylvania, Minnesota, and California. No data is yet available.

Good luck.

Sincerely,

Janice M. Bell

Janice M. Bell
Assistant Professor

JMB/mlz

COPING METHODS

Short-Term Methods	Long-Term Methods
1. I use alcoholic beverages.	2. I talk it out with others (friend, relative, or professional).
4. I daydream.	3. I try to find out more about the situation.
7. I try to see the humorous aspects of the situation.	5. I believe in a supernatural power who cares about me.
8. I don't worry about it. Everything will probably work out fine.	6. I work it off by physical exercise.
9. I sleep more.	10. I take some definite action on the basis of my present understanding.
12. I use food and food substitutes (smoking, chewing gum, eating more).	11. I draw on my past experiences.
13. I get prepared to expect the worst.	15. I make several alternate plans for handling the situation.
14. I curse.	
16. I use drugs.	
17. I become involved in other activities to keep my mind off the problem.	
18. I cry.	
Total = 11	Total = 7

DEMOGRAPHIC SHEET

Age: _____

Sex: _____

Race: _____

Diagnosis: _____

Blood alcohol level at time of accident: _____

Involvement in previous accidents as driver: _____

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