



A comparison of the way rural and urban populations handle stress in relation to mental health and illness

by Ann Michelle Stock Line

A thesis submitted in partial fulfillment of the requirements for the degree of MASTER OF NURSING
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Abstract:

Human beings are faced throughout their lives with stresses which require a variety of coping skills. Researchers since Cannon (1932) and Selye (1936) have been interested in the relationship between stress and illness. Despite research dating back to the 1930's, the positive correlation between stress and mental illness has only recently been definitively established, and few, if any, studies exist which compare rural and urban differences in coping strategies as related to mental-illness and wellness behaviors.

A recent study by Bell (1975) demonstrated that persons exhibiting mental-illness behaviors experienced more stressful life events in the previous six months than those persons exhibiting mental-wellness behaviors. Bell also demonstrated that persons exhibiting mental-illness behaviors used more short-term coping methods, as compared to persons exhibiting mental-wellness behaviors. Bell suggested that repetition of this design should be used to compare rural and urban populations.

This study was a replication of Bell's (1975) study incorporating her suggestion for comparison of rural and urban populations. The purpose of this study was to compare rural and urban people's stress levels and methods of coping with stressful events in relation to mental illness. Both Bell's Coping Scale and the Holmes-Rahe Social Readjustment Rating Scale were used. Respondents included 30 patients in a mental health unit and a sample of 30 rural and urban people from urban centers and rural environs.

The findings indicated that patients admitted to a mental health unit had a higher level of stress than the control group. The patients tended to use more short-term than long-term coping methods. There was no difference between rural and urban populations in their use of short-term or long-term coping methods. There was a significant difference between the higher stress scores of the urban patients as compared to the rural patients.

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STRESS IN RELATION TO MENTAL HEALTH AND ILLNESS

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A thesis submitted in partial fulfillment
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ABSTRACT

Human beings are faced throughout their lives with stresses which require a variety of coping skills. Researchers since Cannon (1932) and Selye (1936) have been interested in the relationship between stress and illness. Despite research dating back to the 1930's, the positive correlation between stress and mental illness has only recently been definitively established, and few, if any, studies exist which compare rural and urban differences in coping strategies as related to mental-illness and wellness behaviors.

A recent study by Bell (1975) demonstrated that persons exhibiting mental-illness behaviors experienced more stressful life events in the previous six months than those persons exhibiting mental-wellness behaviors. Bell also demonstrated that persons exhibiting mental-illness behaviors used more short-term coping methods, as compared to persons exhibiting mental-wellness behaviors. Bell suggested that repetition of this design should be used to compare rural and urban populations.

This study was a replication of Bell's (1975) study incorporating her suggestion for comparison of rural and urban populations. The purpose of this study was to compare rural and urban people's stress levels and methods of coping with stressful events in relation to mental illness. Both Bell's Coping Scale and the Holmes-Rahe Social Readjustment Rating Scale were used. Respondents included 30 patients in a mental health unit and a sample of 30 rural and urban people from urban centers and rural environs.

The findings indicated that patients admitted to a mental health unit had a higher level of stress than the control group. The patients tended to use more short-term than long-term coping methods. There was no difference between rural and urban populations in their use of short-term or long-term coping methods. There was a significant difference between the higher stress scores of the urban patients as compared to the rural patients.

Chapter 1

INTRODUCTION AND CONCEPTUAL FRAMEWORK

INTRODUCTION

Coping with stress is a universal phenomenon. More and more, research is reporting a positive correlation between stress and illness, including mental illness. Stress affects everyone, whether the individual is aware of it or not. Happy events as well as unhappy events affect the human body in a stressful way.

How one perceives an event determines how stressful the event will be for him. Environmental factors and one's own coping ability are significant factors in the incidence of disease following stress and how much the stressful event will affect normal functioning. People are under some degree of stress at all times. Coping methods allow a person to adapt to stress, provide ways of reducing it when it becomes excessive, or persists over time. Short-term coping methods afford only temporary relief, whereas long-term coping methods keep the degree of stress experienced tolerable over long periods of time. When a person's coping methods are inadequate or the intensity of stress is unusually high or stress persists for an unusually long period of time, illness is often the result. Stress is a major factor in many illnesses.

There is a need to help people identify stressors in their lives, those events experienced by the individual which require some degree

of adaptation. If people can identify and evaluate the effects of stressors, they will be able to determine alternate ways of responding, ways to develop more effective and perhaps more long-term coping methods. Health professionals can assist people in the process of coping with overwhelming stress.

This author became interested in the effects of stress when she read Hans Selye's book, The Stress of Life (1956). Selye's description of the physiological changes which occur as the body responds to stress is intriguing, not only in terms of stress-related physical illnesses, but also the possibility of stress-related mental illnesses, as well.

People with different lifestyles may be subjected to different stressors, or environmental variations may result in different levels of stress. For example, the people who have a rural lifestyle may have more or less stress than people with an urban lifestyle. These two populations may use different methods of coping with stress. A point of interest for this author was to find out if there are any significant differences in the levels of stress and methods of coping with stress between rural and urban populations.

STATEMENT OF THE PROBLEM

Do rural and urban populations differ in mental-wellness and illness behaviors in response to stress as indicated by use of long-term and short-term coping methods?

PURPOSE

This study is a replication of one by Janice Bell (1975) in which she examined the relationship between stressful life events and mental-illness and mental-wellness behaviors and the coping methods used by individuals exhibiting each behavior. Bell suggested that her study be replicated with a rural population. The purpose of this study was to compare the differences between rural and urban populations in their relationships between stressful life events, coping methods, and mental-illness and mental-wellness behaviors, and to see if the findings of a study done by Bell hold true in a rural-urban comparison.

This author is interested in doing this study for several reasons. Stress related to life events occurs in rural and urban populations. Discovery of a difference in stress levels and associated behaviors (coping methods) would either support or refute commonly held assumptions about the benefits of rural living. Rural living is believed to be advantageous for health. Is there less stress in rural living?

How an individual handles stress is an important factor in health. What are the most effective coping methods for relief of stress? People learn coping styles while growing up. They watch their parents, extended family, and other significant adults in their lives deal with everyday stresses and strains of life. Is it possible that people living in rural areas have more effective coping methods and that our stereotype of the presence of extended families, slower pace, more

space and less crowding contribute to developing these skills? It is important to look at differences between rural and urban lifestyles and the means by which these populations handle stress in their lives. By determining the most effective coping skills and methods of decreasing the number of stressful life events of individuals in both populations, it may be possible to use that information to enhance the lives of others.

CONCEPTUAL FRAMEWORK

Selye's General Adaptation Syndrome

The conceptual framework for the study is based on the general adaptation syndrome as formulated by Hans Selye (Selye 1956, 1974, 1975, 1978). Pages 1 through 8 are a discussion of his work. The Holmes-Rahe Theory of the impact of recent life events on the precipitation of illness (Holmes and Rahe 1967) also figures in the conceptual framework and is discussed later.

Selye determined that there is an integrated syndrome of closely interrelated adaptive reactions to non-specific stress itself. This Selye called the "General Adaptation Syndrome" (GAS). Stress is not necessarily bad for one, but the system must be prepared to cope with or adapt to the stress. Medically speaking, internal stress is the rate of wear and tear in the body.

As a medical student, Selye observed that various infectious diseases seemed to share common physical manifestations. That is, the

patient felt and looked ill, the tongue was coated, there were diffuse aches and pains in joints, fever, loss of appetite and intestinal disturbances, enlarged spleen or liver, inflamed tonsils, and other symptoms were present. Selye referred to these manifestations as the "syndrome of just being sick." From there, Selye tried to determine what disease is, what stress is, and how they are related. After many years of experimentation, mostly with rats, Selye developed his theory of stress.

Many new terms were defined by Selye, such as the following: non-specific changes, non-specific agents, systemic stress; alarming stimulus or stressor, stress, alarm reaction, stage of resistance, stage of exhaustion, general adaptation syndrome, specific resistance, non-specific resistance or crossed-resistance, adaptation energy or adaptability, conditioning factors, and diseases of adaptation. He defined stress as the state manifested by a specific syndrome which consists of all the non-specifically induced changes within a biological system. He defined stressors as any agents capable of eliciting the alarm reaction and, if prolonged, the general adaptation syndrome. The alarm reaction is the sum of all non-specific phenomena elicited by sudden exposure to stimuli which affect large portions of the body. After exposure to a stressor, the alarm reaction begins. This phase has two parts--the phase of shock and the phase of counter-shock. Some symptoms found in the phase of shock are: hypothermia, hypotension,

depression of the nervous system, decrease in muscle tone, hemoconcentration, deranged capillary and cell membrane permeability, hyperkalemia, acidosis, a transitory increase followed by a decrease in blood sugar, leucopenia followed by leucocytosis, eosinopenia and acute gastro-intestinal erosions. The shock, if severe enough, will go into "irreversible shock," and death ensues.

The phase of shock is followed by the phase of counter-shock, which is characterized by reactions of defence against shock. The adrenal cortex enlarges with signs of increased activity, and acute involution of the thymico-lymphatic apparatus occurs. In reversal of the phase of shock, changes are seen such as increased blood pressure, hyperchloremia, hyperglycemia, increased blood volume, alkalosis, increased diuresis, and, often, hyperthermia. The changes occur largely because of the discharge of corticoids into the blood. This phase sometimes appears as improvement. The patient goes into shock, then seems to improve, only to go into irreversible shock, followed by death. Death may result because the phase of counter-shock is not adequate and cannot be maintained so that exhaustion gives way to fatal shock.

The counter-shock phase is followed by the stage of resistance which is characterized by an increased resistance to the specific stressor against which the body is fighting and decreased resistance to other stimuli. The resistance to the specific stressor is at the

expense of resistance to other stressors. During this stage, most of the morphological and biological changes of the alarm reaction disappear or are reversed.

In the stage of exhaustion, adaptation may wear out if exposure to the stressor is prolonged. At the point of exhaustion, many of the characteristics of the alarm reaction stage return and further resistance is impossible.

What factors elicit the GAS? In general, any factor or change affecting a living organism is a stressor. Stressors which affect a large portion of the body evoke an intense GAS. Some examples of stressors include trauma, mechanical or chemical interference with the function of vital organs, hemorrhage, burns, nervous stimuli, rest (extensive "therapeutic" bed rest), and infections. Combined exposure to several systemic stressors can be accumulated. In other words, the effect of stressors combine and result in more serious illness.

There are various pathways through which stress elicits systemic reactions. Messages that the body is being stressed are probably carried through the circulatory system and/or nervous system by neuro-humoral transmitters, such as noradrenalin and acetylcholine. These messages are carried to the brain and the nerves exerting their manifold actions on the body. The exact pathway is not known.

Selye identified what he called disease of adaptation. When the stress reaction fails to cope adequately with a potential disease-

producing situation, the body develops diseases of adaptation. There is an element of adaptation in every disease. In some cases, the maladies are produced directly by the disease; in others, the body's own defensive adaptive reactions are more prominent. Only in the latter case do we commonly speak of diseases of adaptation. Usually, adaptation consists of a balanced blend of defense and submission. Some diseases are due to an excess of defensive, others, to an overabundance of submissive, bodily reactions (Selye 1976).

It is possible to determine that a person is experiencing undue stress before he suffers evident damage with diseases of adaptation such as a nervous breakdown, peptic ulcer, or heart attack. There are symptoms of stress that can be determined by assessing blood levels of adrenalines, corticoids, ACTH, and a drop in blood eosinophils, creatine/creatinine ratio, elevation of blood lipids such as cholesterol and fatty-free acids and increased blood pressure.

There are signs of stress that can be observed by individuals themselves. Each person usually responds to stress in a predictable way, depending on what seems to be the most vulnerable part of his or her body. The following are some of the signs of which an individual may become aware: general irritability, hyperexcitation or depression, pounding of the heart indicating increased blood pressure, dryness of the throat or mouth, impulsive behavior, emotional instability, inability to concentrate, flight of thoughts and general disorientation,

floating anxiety, trembling, nervous tics, insomnia, pain in the neck or lower back, loss of or increased appetite, increased smoking, increased use of drugs, increased use of alcohol, nightmares, neurotic behavior, psychosis, and accident-proneness.

Diseases of adaptation can include sudden heart attack, most probably due to abnormalities of cardiac rhythm, induced by nervous stimuli attributed to physical or emotional stress resulting in an acute alarm reaction. Death from the "evil eye" and other mystic events may be due to a similar mechanism. Some other diseases of adaptation include the inflammatory diseases such as rheumatic and rheumatoid diseases, inflammatory diseases of skin and eyes, allergic and hypersensitivity diseases, and infectious diseases.

There is little doubt that diseases related to stress are on the increase. Medical progress has focused on diseased parts and interventions, neglecting the common denominator of stress in these "diseases of adaptation" (Smith and Selye 1979). Health and homeostasis are greatly dependent upon adaptation or the ability to cope with the stress of life.

While Selye was interested in the physiological manifestations of stress, others were interested in the relative differences in the effect of stressors--which stressors individually and together commonly resulted in illness. In the following section, the work of

Thomas Holmes and Richard Rahe will be discussed regarding the Social Readjustment Rating Scale.

Life Stress and the Social Readjustment Rating Scale

Adolf Meyer, a well-known psychiatrist, preceded Holmes in investigating the disciplines of biology, psychology, and sociology, and their relationship to the process of health and disease in man. He created the "life chart," which was a device used to organize a biography of medical data. The life chart took into account the occurrence of disease and the setting in which it occurs (Holmes 1979).

Prior to 1967, Thomas Holmes, M.D., was interested in antecedents to disease. While Selye studied the physiological manifestations of internal stress in the human body, Holmes' attention was drawn to correlating proximate antecedents which he called life events with the onset of disease.

In the late sixties, Holmes and Rahe (1967) asked whether it is possible to make predictions about the onset of illness. The life chart indicated that it might be possible. Numerous studies of stressful life events were done on many population samples. A consistent and striking finding was that one of the important factors determining the time of onset of disease or health change is the accumulation of many life changes. Over many years of study, 5,000 case histories were reviewed by studying the life charts and determining life-change events occurring at the onset of illness. From these

studies, a list of 43 life events were empirically observed to occur just prior to the time of onset of illness. Forty-three items compose the Social Readjustment Rating Scale (SRRS) as it is known today (see Appendix E). Through a systematic research process, these items were assigned a quantitative value and are referred to as life-change units (LCU). The SRRS is a tool which measures quantitatively the level of stress an individual is experiencing. The SRRS is used in this study to see if there is a significant difference between the stress levels of patients in a mental health unit and a control group. The SRRS is discussed further in the next chapter.

Stress

There are many definitions of stress developed by different researchers. The word stress came into common use less than 30 years ago when first coined by Hans Selye. Selye's definition of stress is the state manifested by a specific syndrome which consists of all the non-specifically induced changes within a biological system; in other words, the rate of wear and tear on the body. Selye borrowed the word from physics to describe the organism's reaction to a variety of physical noxious influences such as cold and infection, as well as certain emotions such as fear and anger. This study is based on Selye's conception of stress.

Other researchers define stress as the altered state of an organ produced by agents (stressors, in Selye's terms) in the psychological,

social, cultural, and/or physical environments. This altered state, when unmitigated, produces deleterious effects on the physical and/or mental well-being of the affected individuals. The outcomes of stress are viewed as being symptoms, syndromes, and/or social dysfunction (Anderson 1978).

Considering the relative stress value of life events, pleasurable experiences such as winning a race or marriage are also powerful stressors and can evoke the same or even greater secretion of epinephrine or hydrocortisone as losing a race or getting divorced. Stress is an individual phenomenon. The same stressor may produce varying responses in different persons. Genetic, social, cultural, environmental, and physiological, as well as other, factors may affect the individual's response to stress. Stress is needed in an individual's life. Without some stress, there would be no life. What is needed is stress without distress (Selye 1974).

The concept of stress need not be confined to what happens when the human organism is pushed beyond its coping capacity. The stress concept is integrally connected to the concepts of homeostasis and restoration. Walter B. Cannon, M.D. (1932) conceived homeostasis as a condition marked by an equilibrium of forces inside the human body. Too much stress is an enemy of homeostasis and restoration in which the factors of disturbance are greater than the factors of resistance.

Coping

Coping is another word with many meanings. Coping is referred to in this study as the things that people do to avoid being harmed by life-stressors. Those behaviors which can effectively relieve stress for long periods of time are considered adequate or long-term coping methods. Those behaviors which may reduce stress and tension to a tolerable limit temporarily, but which when carried on for a long time may have a destructive effect on the person, are considered as short-term coping methods (Bell 1975).

The word coping has been used interchangeably with such concepts as mastery, defense, and adaptation. Pearlin (1978) distinguishes between social resources, psychological resources, and specific coping responses. Resources refer to what is available to people in developing their coping repertoires. Social resources refer to the interpersonal networks available as potential sources of support, such as families and friends. Psychological resources are the personality characteristics people use to help them survive threats by outside stressors in their environment. These psychological resources include the following: self-esteem, a positive self-regard, and mastery or an internal locus of control; that is, the feeling that one is in control of one's own life. Other psychological resources which may be evaluated negatively or positively include denial, self-denigration, the extent which one holds negative attitudes towards oneself, and

escapism (approach or avoidance behavior, moving toward or away from people when troubled). Specific coping responses include behaviors, cognitions, and perceptions used by people when they are actually contending with their life problems. Coping responses represent some of the things people do to deal with life stressors. One coping response is to modify the situation, such as seeking advice, so that the situation is changed in such a way as to exclude the stressor. Another coping response is to control the meaning of the problem with such cognitive responses as, "We're all in the same boat," or "Count your blessings." Another way to control the meaning of the problem is by selective ignoring. By selective ignoring, an individual looks for some positive aspect within a troublesome situation, such as looking at the "brighter side." A third response is one which functions more for the management of stress by helping people accommodate to existing stress without being overwhelmed by it. For example, statements such as, "Everything will turn out okay in time," "Take the bad with the good," and other similar statements, are used. There are other behaviors that may be used to reduce stress, such as watching television, drinking alcohol, exercising, and others. "The actual identification of concrete coping responses having stress management functions is somewhat difficult, however, for there is often nothing intrinsic to behavior that signals that this function is being served" (Pearlin 1978, p. 7). The effectiveness of coping behavior must be judged on

how well it prevents hardships or stressors from resulting in emotional stress. People exposed to similar life stressors may harbor quite different levels of stress because of variations in coping efficacy.

Rural and Urban

Stress and coping methods exist in both rural and urban populations. Sometimes, the distinction between rural and urban populations is not clear, however, although there are stereotypes of both. Rural living is often characterized as quiet, clean, independent, agricultural, friendly, and without the hustle and bustle of the city. Urban living is often characterized as noisy, dirty, dependent, industrial, impersonal, and without the solitude of a pastoral setting. However, these stereotypic perceptions have not been investigated sufficiently to establish any definitive criteria which describe the terms rural and urban. Furthermore, as the population increases, there appears to be less and less distinction between ruralism and urbanism in terms of lifestyles. There is a migration of people from the metropolitan, densely populated centers of this country to the more rural, sparsely populated centers. This is true in western Montana. With migration, attitudes and values, as well as lifestyles, are mixing. Urban people may be becoming more rural in lifestyle, while rural people may be becoming more urban in lifestyle. Because of the possible meshing of rural and urban lifestyles, the author expected that there would be

no significant differences between the rural and urban populations in respect to mental-illness behaviors related to stress.

Definitions

Since this study is a replication of Bell's 1975 study, the definitions (with the exception of rural and urban) used in this study are the same as the definitions used by Bell.

Stressful life events refer to those events experienced by the individual within the last six months that were identified by Holmes and Rahe (1967) as requiring some degree of change or alteration in the person's life situation.

Coping methods are the specific ways a person attempts to reduce stress to a tolerable limit. These are categorized into two groups: long-term coping methods, which include constructive, realistic ways of coping with stress that can effectively relieve stress for long periods of time (see Appendix F); and also include short-term coping methods, which are those which may reduce stress and tension to a tolerable limit temporarily, but which when carried on for long periods of time do not deal with reality and may have a destructive or detrimental effect on the person (See Appendix F).

Mental-illness behavior is any inadequate or inappropriate behavior that resulted in psychiatric hospitalization and in-patient treatment. Mental-wellness behavior is behavior by a person who is not currently receiving hospital psychiatric treatment and who is

functioning adequately in a socially acceptable role in society.

Urban population consists of persons who reside within the city limits of Missoula, Helena, or Butte, Montana, cities with a population of 20,000 or more. These cities are considered business, educational, cultural, and medical centers in western Montana, and have many of the benefits, as well as the problems, of larger metropolitan areas.

Rural population consists of persons who reside in western Montana outside the city limits of Missoula, Helena, or Butte. The geographic definition used here for rural and urban was arbitrarily made. Geographic distinctions, however, are not necessarily the important distinctions. Another criterion designating a rural person included perception of self as rural in terms of occupation or way of life. Occupation itself can also be considered a criterion, as in the case of a farmer or rancher.

Summary

Stress and coping are interrelated with the onset of disease; both physical and mental disease. The physiological responses of the human body to stress have been measured and documented by many researchers. The more the stress, the more the chance for the onset of a serious disease. Coping abilities, which may ultimately determine the effect of stress on the body, differ between individuals. Volumes of material have been written on the subjects of stress and coping,

some of which have more relevance for this study and will be discussed in the next chapter. Rural-urban characteristics or distinctions with regard to stress and coping behaviors have not previously been studied. This author is interested in trying to determine if differences do exist.

Chapter 2

REVIEW OF THE LITERATURE

OVERVIEW

In this chapter, the literature of Selye and Holmes and Rahe will be discussed. Retrospective, as well as prospective, studies on the relationship between stress and illness are cited. A number of more recent investigators have been interested in other variables, such as coping methods, past experiences, ethnicity, and their effects on health. In addition to the Social Readjustment Rating Scale, there may be different measurements used to predict the onset of illness. The Social Readjustment Rating Scale was used in this study in accordance with Bell's method. The concepts of ruralism and urbanism are discussed.

STRESS

A review of the literature by Bell (1977) concluded that stress is an increasingly important factor in our constantly changing society and man must adapt to these changes by developing coping methods essential for maintaining his well-being. It is important to identify stressful life events and find ways to discover how individuals both ill and well cope with stress (Wittkower 1977). Health care professionals can use this information toward their goals of health maintenance and illness prevention.

Hans Selye (1978) has demonstrated by numerous experiments the

physical effects of stress on the animal body. The effects of stress are demonstrated by certain changes in the structure and chemical composition of the body. Selye has named this stress syndrome the General Adaptation Syndrome (GAS). The three stages of GAS are (1) the alarm reaction, (2) the stage of resistance, and (3) the stage of exhaustion.

Homeostasis is maintained in part by the nervous system and the endocrine or hormonal system which help maintain resistance during stress. Health and homeostasis are greatly dependent upon adaptation or coping ability. Increased confusion, decreased functioning and thinking, depression, impulsive behaviors, accident proneness, hallucinations, and thought disturbances have been identified in relationship to an increased stimulation of the central nervous system. There are several factors which influence the resistance to stress: (1) perception, (2) conditioning, and (3) coping mechanisms (Selye 1979).

Cousins (August 3, 1979) synthesized Selye's research which demonstrated that negative emotions produce negative chemical changes in the body. Cousins hypothesizes that positive emotions can produce positive chemical changes in the body. The precise reasons or precise mechanisms which connect emotional well-being and physical well-being are not known. More research is necessary to determine the ways in which these emotions produce positive physiological reactions. Possibly, a patient's state of mind can affect the body's own immunological

reaction to pathological processes. Emotional states affect the secretion of certain hormones such as those of the thyroid/adrenal glands. Recently, a class of hormones has been detected in the brain and pituitary gland. These hormones are called endorphines and have an opiate-like effect on the perception of pain. Endorphines probably assist in healing, in some way. The feelings of hope and confidence in one's own healing powers along with compassionate treatment by others is helpful in overcoming disease (Cousins 1979). Cousins was concerned with his own health and what actions he could take as an individual to promote healing. Holmes and Rahe were concerned with predicting the onset of illness by studying the life events which precede illness. The Social Readjustment Rating Scale was developed to measure the number of life events an individual may experience, and is discussed next.

SOCIAL READJUSTMENT RATING SCALE

Prior to 1967, Thomas Holmes asked the questions: "What are the distant and proximate antecedents or precipitants of disease onset? What is the nature of the reaction when disease does occur? What are some of the factors that influence or modify the cause of disease? Why do people get one disease rather than another? Also, can one discern any generalizations that enable us to predict disease and to use prediction of disease as a basis for possible preventive intervention?" (Holmes 1979:115). Holmes' attention was drawn to correlating

proximate antecedents which he called life events with the onset of disease. Holmes and others (1979) studied case histories in terms of the life events and the onset of disease. It was found that such factors as mood, psychosocial assets, setting, interpersonal relationships affect the onset and course of conditions such as tuberculosis, back pain, nasal allergies, and others.

In the late sixties, Holmes and Rahe (1967) developed the Social Readjustment Rating Scale. Over many years of study, they found that there was a clustering of life events occurring just prior to the time of the onset of disease. A list of 43 life events were empirically observed to appear more frequently than others. These 43 items compose the Social Readjustment Rating Scale today (see Appendix E). These items were further evaluated by 194 subjects. Items were rated by subjects in comparison to one item--marriage--which was given an arbitrary value of 500. The subjects were asked to rate the item in relation to the question, "Is this item indicative of more or less readjustment than marriage?" The numerical values were either more than 500 or less than 500. The mean scores obtained were divided by ten for convenience in using the scale. These numerical values were called Life Change Units (LCU). Death of a spouse has the highest LCU, with a numerical value of 100. All others are arranged in rank order. The relative importance of the item was determined by the amount of change required of the individual. The item's desirability, the emotions

associated with the item, and the meaning of the item for the individual were not considerations in the Social Readjustment Rating Scale. It is the amount of change that was being studied and the relationship of the amount of change to the onset of illness.

A cross-cultural study comparing Americans with Japanese showed that the two groups ranked the items in the SRRS in a highly concordant manner (Masuda and Holmes 1967). Later, a study was done (Rosenberg 1975) which indicated that previous experience with life events did not affect the amount of readjustment required.

Retrospective studies of the two-year period before the onset of illness indicated that 30% to 35% of the people with low life change got an illness. Fifty percent of the people in the intermediate range of life change developed an illness and about 80% of the people in the high range of life change became ill in the two-year period at risk (Holmes and Rahe 1967).

Prospective studies were done by studying amounts of life change, predicting what was going to happen, and then studying what actually happened in the two-year period at risk. The findings of the prospective studies indicated about the same percentages for illness occurring in the low-risk group (30%), medium-risk group (50%), and the high-risk group (80%) (Rahe et al. 1967, 1970, 1973).

A seriousness of illness rating scale was developed in much the same way that the SRRS was developed. Illnesses were then arranged

in a rank order of seriousness. These illnesses were correlated with the life change unit scores. There was a positive correlation of 0.65 for chronic disease. These findings indicated that if a person has more than 300 life change units in the last year and gets sick in the near future, the possibility is that he or she will get sick with one of the more serious diseases such as cancer, diabetes, schizophrenia, or heart attack. If a person's life change units amount to less than 100 and he or she becomes sick in the near future, the illness is apt to be less serious. In other words, Holmes found that people are more likely to get sick when they experience life change, and the greater the magnitude of the life change, the more serious the illness will be (Holmes 1979).

When using the Social Readjustment Rating Scale, the LCU are totaled. Of those people with over 300 LCU for the past year, almost 80% will get sick in the near future; with 150-299 LCU, about 50% will get sick in the near future; and with less than 150 LCU, only 30% will get sick in the near future. Descriptions of the SRRS and LCU were offered in Chapter 1.

Holmes (1979) studied individuals with various conditions, such as head pains, skeletal muscle pain, and dyspnea. He determined that there were patterns in the appearance of these symptoms which correlated with such factors as coping in life situations, tenseness and

mood, the individual's psychological state, and his attitude toward the situation in which he finds himself.

In a study by Hurst (1978), the results demonstrated that adjustment and distress ratings of life events were highly correlated with similar ratings made by original normative groups in the general rank order of adjustment or distress for various life events. However, results of the study indicate that the sample gave significantly higher mean adjustment ratings for 69% of the Social Readjustment Rating Scale items and lower mean distress ratings for 69% of the ratings of distress scale items. Life Change Scores based on individuals' ratings may reflect more on the impact of life events than on the quality of the life events that have occurred.

Rosch (1979) describes a prospective study done by C. B. Thomas which indicates that by using psychological stress tests as well as other criteria, it might be possible to predict the likelihood of becoming mentally ill or developing hypertension, coronary disease, or cancer. Myers et al. (1975) report that in relation to life events, people who show increased symptoms but report few life events are less integrated in their social system than those who report few symptoms but many life events. People who are better adjusted to their roles and more satisfied in general are less likely to manifest symptoms even in the event of increased life events.

Ruch (1977) found that while the concept of life change involves both quantitative and qualitative dimensions, the quantitative dimension, as used in the Holmes-Rahe Social Readjustment Rating Scale (SRRS), is the most important one. Dohrenwend et al. (1978) completed a research project which challenges several arguments for rejecting the rationale of the SRRS. Improvements in the areas of life events scale construction included construction of the life event list, selection of judges, and tests of validity of ratings. The findings suggested that there are differences in the rating of life events. These differences are in the areas of sex, social class, and, noticeably, in ethnic background. Dohrenwend (1978) agrees that scientific research has determined a causal relationship between stress and illness, but maintains that reactions to stressful life events cannot be understood without considering the contextual factors of amount of previous experience with an event, amount of social support available, degree of anticipation, and control over occurrence. Attention should also be focused on the variety of factors that mediate the impact of the event.

Mechanic (1961) studied the relationship between stress and illness in general. His study indicated that a tendency to adopt the sick role is the most powerful variable, even more than stress. He suggests one task of medical sociology is to trace the connections between such influences and the occurrence of actual and known illness.

COPING

Eaton (1978) found evidence that if the individual has not experienced similar life events or stressors before, the event is more likely to cause mental illness. Evidence also indicated that mental illness may be prevented if the individual had support within the household in times of crises.

Menninger (1963) describes many ways in which individuals are known to use coping devices during life's process of accommodation with other organisms and organization, facts, and fictions of his environment. These devices range from the turning to mother or someone like mother for protection and comfort to the physical activities of the neuromuscular system. Coleman's (1979) recent studies of how hospitalized patients handle stress suggest that denial and illusion are useful in coping with stress and may be the most useful and the best devices in certain situations.

Biomedical scientists are studying the benefits of relaxation. Less and less muscle tension is comfortable, restful, and recharging. The importance of muscle relaxation to the maintenance of health and the relief of illness has not received the recognition it merits. Since bio-feedback systems were developed, it is now known that the mind has the ability to reduce muscle tension far beyond that ever before believed possible (Brown 1974). Putt (1979) found that bio-feedback for patients with stress-related illnesses such as onset

insomnia, phobias, migraine, tension headache, tremors, and hypertension could obtain relief from these symptoms by relaxation training using bio-feedback.

In a paper written by Pearlin (1978), remarks are made to the effect that the social scientists have paid limited attention to coping as compared to the abundant interest in circumstances that are potentially deleterious to the well-being of people. Coping effectively is the ability to be under severe strain, but experience no stress. What people do in dealing with their problems can make a difference to their well-being. Coping may require intervention by collectives rather than individuals. Coping failure, at times, may represent the failure of social systems in which the individual is enmeshed.

Coelho (1974) describes Haan's classification of general mechanisms of the ego in adaptive behaviors. First are the defense mechanisms of displacement, reaction formation, and repression. Second are the coping functions of sublimation, substitution, and suppression. Haan identifies cognitive activity as defensive isolation, intellectualizing, and rationalization or coping such as objectivity, intellectuality, and logical analysis. Coelho reviews the numerous coping scales, instruments of measuring defense mechanisms and coping inventories, that have been developed over the years. He discusses Gorss' categorization of response into four groups: (1) acting out, (2)

denial and repression, (3) psychological distortion, and (4) appropriate solution-seeking. Dudley (1977) categorizes a person's ability to cope into three groups, which he refers to as psychosocial assets: (1) social support, (2) coping ability, and (3) adaptive ability. Kasl and Harburg's (1975) research showed no relationship between mental illness or mental health and an individual's perception of his neighborhood as a high-stress neighborhood (low socioeconomic with high crime and instability) or low-stress neighborhood (high socioeconomic with low crime and high stability).

In a study by Dunner (1979), about 50% of the patients with bipolar affective illness (manic-depressive illness) described life events before the onset of their initial episodes. Of the 79 patients studied, 35 had initial manic episodes and 44 had depressive onsets. Difficulties at work and interpersonal conflicts were reported most frequently by persons who had mania as their first episodes. Postpartum period and surgery were reported only by patients with depression on initial episodes.

Warheit (1979) demonstrated the complex interrelatedness of life events, coping resources, and depressive symptomatology. His findings suggested that while life event losses and poor coping resources are related to increased incidence of depression, depressive symptomatology is a condition that may predispose the person to life events which then increase their present levels of psychiatric distress.

Tennant (1978) demonstrated that life events are pathogenic in neurosis because of their emotionally distressing impact and not simply because they produce life change.

Mueller (1978) reported findings which provide some support for the contention that life events should be measured in terms of undesirability to assess their stressfulness best. His study results indicated that patients tend to experience more events than non-patients, particularly undesirable events that could be confounded with psychological conditioning.

RURAL AND URBAN

Whether one lives in a rural or urban population may make a difference in stress levels and coping methods used in daily living. Although the U.S. census of population makes the designation of rural people as those people who live in places with fewer than 2,500 people (Copp 1976), this rural-urban distinction is less discriminating than in the past because the social conditions of living have changed. Rural no longer implies farm or agriculture, and urban influences on lifestyles have progressed beyond the city limits. Many of the people who live on farms obtain more income from non-agricultural sources than from agricultural sources. The rural population is not all homogeneous and not primarily identified with agriculture. In general, the rural population is not principally agricultural, but the agricultural population is found principally within the rural

population. There is a disproportionate share of low-income families, people with the lowest educational attainment, substandard housing, and elderly people living in rural areas. The National Health Survey measures indicate that rural people are affected less by illness than urban people. Large metropolitan areas have the highest morbidity rates, followed by non-farm, non-metropolitan; farm people have the lowest morbidity rates of all (Hassinger 1976).

Qualification of the rural versus urban observations includes the concept that persons as well as places form a continuum rather than a dichotomy (Thomlinson 1969). This is especially true in western Montana where the distinction between rural and urban is not as clear as in the greater metropolitan areas of this country. It is correct to say, however, that, in general, city dwellers usually work with people and man-made objects, whereas rural workers deal more directly with nature. The urban population is affected less directly by the weather than the rural population, whose crops depend on moisture for growth. Opportunities for social interaction are greater in the city. On the other hand, urban life is often perceived as more impersonal. The urban population is a population of ethnic heterogeneity. City people are more dependent on others for services, whereas rural people are more independent in meeting their own needs. Each group had its own stereotype for the other--the "city slicker" and the "country hick" (Thomlinson 1969).

SUMMARY

Bell found a significant relationship between high stress levels, inadequate coping ability, and the onset of mental illness. Researchers have attempted to measure stress quantitatively, as well as qualitatively. Initially, the amount of change was considered to be the most significant factor in the effect of stress on the body. More recently, researchers are studying the different methods people use to handle their stress and considering these coping abilities as significant in the ultimate outcomes of the effect of stress on the body. High stress and low coping ability are factors in the onset of some mental illnesses. In this study, the author has attempted to combine the concepts of stress and coping in comparing rural and urban populations and their mental-illness and mental-wellness behaviors. The next chapter describes the methods used in this comparison.

Chapter 3

RESEARCH METHODOLOGY

OVERVIEW

In this chapter, the methods Bell used are discussed, as well as the necessary departures from Bell's study. The hypothesis, design, and research procedure, including sample, data collection methods, research tools, and data analysis methods are presented.

REVIEW OF BELL'S STUDY

In 1975, Bell studied the frequency and quality of stressful life events experienced by mentally ill persons as compared to persons exhibiting mental-wellness behaviors. A major focus of the study was a comparison of the coping methods used by individuals in both groups.

Bell's study (1975) was done in the counties of San Bernardino and Riverside in the state of California. The psychiatric units of three general hospitals in these counties were used. Data collection was done using the Holmes and Rahe Social Readjustment Rating Scale and an 18-item coping scale administered to both experimental and control groups. The terms 'experimental' and 'control' were used by Bell; therefore, they were also used in this study for continuity.

In Bell's study, the experimental group consisted of 30 psychiatric inpatients in three general hospitals, male and female, ages 18-65, oriented in three spheres, able to read, write, and comprehend English, and admitted to the mental health unit in the past 48 hours.

The control group was made up of persons selected randomly from an employee computer list of Riverside employees and San Bernardino residents who happened to visit one of the three general hospitals being used in the study. Control group subjects had no history of psychiatric illness, were adequately functioning in social roles, presently not receiving medical treatment, able to read, write and comprehend English, and oriented in the three spheres.

The samples were matched on the bases of age, sex, and county of residence. The data used in the statistical analysis included the subjects' sex, individual responses on the 43 items of the SRRS, and total SRRS life change units scores. Individual ratings on each item of the coping scale were also used.

A chi-square test was utilized to compare total life change unit scores. A paired t-test was used to analyze the difference between the percentage of short-term coping methods reported to the total number of coping methods chosen. Total life change unit scores and types of coping methods were subjected to a chi-square test.

The current study was basically a replication of Bell's study, following through on the suggestion that replication be done comparing rural and urban people on the same variables used in the Bell study. However, there were several methodological differences in the current study. First, the investigator used a random sample instead of a matched sample for the control group; this was necessary because sample

size was not large enough to make matching possible. Secondly, the criterion regarding history of mental illness was changed from "no history of mental illness" to "no history of mental illness in the past five years." The change was made because a person who has been functioning well for a period of five years and who has not received psychiatric care during that time is generally considered mentally well. A third change was elimination of the criterion of not presently receiving medical treatment. The change was made because the author believed that since illness is one of the life events on the Social Readjustment Rating Scale, it should be included. Further, the change was necessary since a random sample was used.

A fourth change was elimination of the criterion that the experimental group be composed only of patients admitted in the past 48 hours. Some patients were not able to meet other criteria, such as orientation to time, place and person, until more than 48 hours had passed, but were later able to meet all criteria. A fifth change was that there was no attempt to match control and experimental groups in relation to county of residence. Matching by county was not done, since all of western Montana is similar in industry, terrain, and characteristics of the population. Instead, as Bell had suggested, the present study was designed to compare rural and urban residents, using the same variables.

The final change involved analysis. Bell used a paired t-test to analyze the differences between the percentage of short-term coping methods to the total number of methods chosen. A paired t-test was not used in this study since there was no treatment applied to either group, so no before-and-after measurement was needed. The present author used the chi-square, which is a test of significance employed to make comparisons between frequencies, rather than between mean scores (Levin 1977).

HYPOTHESES

The hypotheses of this study were essentially the same as Bell's, with the exception of the rural and urban comparison which was included in this study. The hypotheses of this study were:

1. Persons who exhibit mental-illness behaviors will have experienced more stressful life events within the last six months than people who exhibit wellness behaviors.
2. Persons who exhibit mental-illness behaviors will report more short-term coping methods than persons who exhibit wellness behaviors.
3. There are no significant differences between rural and urban populations in respect to mental-illness behaviors related to stressful life events.

DESIGN

The design of this study is a descriptive-comparative design. The dependent variables are mental-illness and mental-wellness

behaviors. The independent variables are stress levels, coping abilities, residence (rural or urban), age, and sex. This design is similar to Bell's design, with the exception of the comparison between rural and urban. The rural population was designated as the areas in western Montana outside the city limits of Missoula, Helena, and Butte. The urban population included residents within the city limits of Missoula, Helena, and Butte.

PROTECTION OF HUMAN RIGHTS

The human rights requirements of Montana State University were met. Participants in the study were informed that their requested participation was voluntary, confidentiality would be preserved, and their identities would not be revealed. The research committee of the local hospital also approved the study.

SAMPLE AND SETTING

The subjects were divided into two groups--control and experimental. The experimental group subjects were patients admitted to the mental health unit of a local hospital. Patients with various admitting diagnoses such as schizophrenia, affective disorders, drug dependency, and alcoholism were included in the study. The experimental sample included men and women between the ages of 18 and 65. Other criteria were willingness to consent to the study; ability to read, write, and comprehend English; orientation to time, place, and person; and having residence in western Montana.

The control group included persons from western Montana who were randomly selected from the telephone book. The control group met the same criteria as the experimental group. It included only persons who had not been treated for mental illness in the past five years.

The two groups were divided into rural and urban samples. The rural group included persons who resided in western Montana outside the city limits of Missoula, Helena, or Butte, and who perceived themselves as rural in terms of occupation and/or way of life. The urban sample included persons who lived within the city limits of Missoula, Helena, or Butte.

DATA COLLECTION METHODS

One hundred questionnaires were mailed. A cover letter was included to explain the purpose of the study and to request voluntary participation of the subjects (see Appendix C). Fifty questionnaires were mailed to rural people--25 to men and 25 to women. Fifty questionnaires were mailed to urban people--25 to men and 25 to women (see Appendices D and E). Samples were matched according to whether they were rural or urban. Demographic data included town of residence, age, sex, and occupation.

The collection of data from the experimental group was as follows. The staff of the mental health unit--both nurses and physicians--were informed of the nature and purpose of the study and their cooperation was requested. For six weeks, the investigator reviewed daily the

patients who were admitted to the mental health unit. Staff members were consulted as to the advisability of including the patient in the sample. If the staff approved, the patient was approached by the investigator and asked for his or her consent and willingness to take part in the study. If the patient met the criteria, he or she was asked to sign a consent form. The patient was then given the questionnaire and asked to complete it according to the directions. The patient then answered the questions in the presence of the investigator, who assisted with any questions he or she may have had.

RESEARCH TOOLS

The research tools included an 18-item coping scale which was used by Bell in her study (see Appendix D). The coping scale consisted of 18 different coping behaviors which are commonly used by people in this society. The coping methods were categorized by Bell as either long-term or short-term coping methods. Ten of the coping methods were derived from a study by Sidle et al. (1969) in which there was an attempt to develop a relatively structured, easily scorable scale by which to assess coping strategies. The other methods were developed by Bell.

The second tool used was the Holmes-Rahe Social Readjustment Rating Scale (see Appendix E). This scale was developed by Thomas Holmes and Richard Rahe in 1967 and has been used numerous times by Holmes and Rahe and by many other researchers in the past 13 years.

The scale measures the total amount of life change units a person may have experienced in the past year. In this study, the subjects were asked to record only those life events that occurred in the past six months, in conformity with the method used by Bell.

DATA ANALYSIS

The data analysis was computed at the University of Montana Computer Center. The Statistical Package for the Social Sciences (SPSS), which is an integrated system of computer programs designed for the analysis of social science data, was used. A chi-square test of significance was used to compare the total life change unit scores by the control and experimental groups, rural and urban groups and male and female groups. A chi-square test of significance was also used to compare the use of short-term and long-term coping methods between control and experimental groups, rural and urban groups, and male and female groups.

Chapter 4

ANALYSIS AND INTERPRETATION OF FINDINGS

The purpose of this study was to compare the differences between rural and urban populations in their relationships between stressful life events, coping methods, and mental-illness and mental-wellness behaviors, and to see if Bell's findings hold true in a rural and urban comparison. The hypotheses of this study were:

1. Persons who exhibit mental-illness behaviors will have experienced more stressful life events within the last six months than people who exhibit wellness behaviors.
2. Persons who exhibit mental-illness behaviors will report more short-term coping methods than people who exhibit wellness behaviors.
3. There are no significant differences between rural and urban populations in respect to mental-illness behaviors related to stress scores.

SAMPLE

The total number of respondents in this study was 60. The control sample consisted of 30 people--15 rural people and 15 urban people. The experimental group consisted of 30 patients in a mental health unit of a local hospital. There were 12 rural patients and 18 urban patients. The data collection period lasted six weeks. One hundred questionnaires were mailed to residents of western Montana. Fifty questionnaires were sent to residents in the rural area in western Montana and 50 to residents in the urban area. Of the 100 question-

