



A study of preventive health behaviors and attitudes in a rural population
by Norine Evelyn Goddard

A thesis submitted in partial fulfillment of the requirements for the degree of MASTER OF NURSING
Montana State University

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Abstract:

A descriptive-exploratory study was done in the area of preventive health using rural Montana residents as the sample. A questionnaire was devised by the investigator to elicit information regarding specific behavioral and attitudinal items related to preventive health. Questions were also included to obtain demographic and supportive data.

The behavioral and attitudinal items were cross tabulated with the independent variables of distance from the nearest health facility, distance from the health facility generally utilized, annual income per household, and age to determine the correlations.

The results of the study revealed that rural Montanans were concerned about general expenses associated with health care. A majority indicated that they did not favor government-paid health coverage, however, they were interested in services that could be offered at reduced rates, such as screening clinics. Nutrition and exercise were the most frequent selections the sample perceived as preventive health. Newspapers and television provided the major sources of health information. All groups favored controlling their health condition with diet and/or exercise in preference to a behavior that was dependent upon health professionals. Mental health, social, work, and nutrition were the three health related areas that were utilized the least.

The group that was accustomed to traveling greater distances to receive health care revealed the least concern about the expenses associated with the services. The same group also indicated a greater interest in health education.

Lower income households had a lower incidence of health insurance coverage, and fewer regular physical exams. The lower income group also expressed the most concern about the expenses associated with health care activities.

A higher percentage of persons in the advanced aged group indicated that they visited health professionals after a problem was evident rather than before because of the expenses. The advanced aged group had the highest percentage of health insurance coverage. The middle aged group had the most concern about the expenses associated with mental health therapy. The young aged group revealed the most interest in services that could be offered at a reduced cost, such as screening clinics.

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Date June 5, 1980

A STUDY OF PREVENTIVE HEALTH BEHAVIORS AND
ATTITUDES IN A RURAL POPULATION

by

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A thesis submitted in partial fulfillment
of the requirements for the degree

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ABSTRACT

A descriptive-exploratory study was done in the area of preventive health using rural Montana residents as the sample. A questionnaire was devised by the investigator to elicit information regarding specific behavioral and attitudinal items related to preventive health. Questions were also included to obtain demographic and supportive data. The behavioral and attitudinal items were cross tabulated with the independent variables of distance from the nearest health facility, distance from the health facility generally utilized, annual income per household, and age to determine the correlations.

The results of the study revealed that rural Montanans were concerned about general expenses associated with health care. A majority indicated that they did not favor government-paid health coverage, however, they were interested in services that could be offered at reduced rates, such as screening clinics. Nutrition and exercise were the most frequent selections the sample perceived as preventive health. Newspapers and television provided the major sources of health information. All groups favored controlling their health condition with diet and/or exercise in preference to a behavior that was dependent upon health professionals. Mental health, social work, and nutrition were the three health related areas that were utilized the least.

The group that was accustomed to traveling greater distances to receive health care revealed the least concern about the expenses associated with the services. The same group also indicated a greater interest in health education.

Lower income households had a lower incidence of health insurance coverage, and fewer regular physical exams. The lower income group also expressed the most concern about the expenses associated with health care activities.

A higher percentage of persons in the advanced aged group indicated that they visited health professionals after a problem was evident rather than before because of the expenses. The advanced aged group had the highest percentage of health insurance coverage. The middle aged group had the most concern about the expenses associated with mental health therapy. The young aged group revealed the most interest in services that could be offered at a reduced cost, such as screening clinics.

CHAPTER 1

INTRODUCTION

The psychologists Carol Laman and Richard Evans (1980), working with behavioral medicine research at the University of Houston, have described the current leading causes of death for the United States population as heart disease, cancer, cerebrovascular disease, and accidents. All four of these causes of death have at least one behavioral component, and none has a known vaccine or cure. Their report stated that in 1976 half of all American deaths were attributable to unhealthy behaviors or life-style. Hygiene, diet, and environmental conditions have long been recognized as important variables in health maintenance. Recently a trend has been noted toward assuming more responsibility for preventive health.

Health care competes with other budget priorities, and there are no guidelines to determine the "right" share for individuals. Those who have given serious thought to the matter frequently question if technical advances in health care have exceeded their practicality. Do the select few who benefit from expensive medical technology deprive the remaining majority from health care? The high proportion

of medical problems arising from personal and social lifestyles and from mental attitudes have created doubts about the rationality of concentrating so many resources into acute care facilities rather than into preventive measures.

Health and Economic Issues in the U.S.A.: An Overview

The cost of medical care in the United States now exceeds 118 billion dollars annually. It may be said that the average citizen works one month out of each year to help pay the nation's health care costs (Hilbert, 1977). In the past fifteen years hospital costs have gone up more than one thousand percent (Jennings, and Jennings, 1977). For example, in 1950 the average hospital cost per patient day was \$15.62; in 1976, this had inflated to \$175.08 (Hilbert, 1977). The White House has estimated that at the present rate of increase, medical costs will double every five years (Kriss, 1979). Nearly all adults in the United States have been affected by medical inflation in the form of higher taxes to finance Medicare and Medicaid, smaller wage increases, or higher prices on commodities.

Hilbert (1977) has explained some of the problems associated with preventive health. Prevention is a broad concept encompassing nonspecific social factors such as

health education, adequate housing and nutrition, plus physically and emotionally safe environments. Prevention can be thought of as an activity which keeps something from happening. Hilbert's (1977) article lamented the fact that a high priority has been placed on prevention by the government, yet prevention programs have been cut from the health budget. Prevention only rates 2 percent to 5 percent of national health care expenditures, with health education probably the recipient of less than half of 1 percent (Somers, 1977:963).

Purpose of the Study and Statement of the Research Problem

The purpose of the study was to investigate certain behaviors and attitudes rural persons have regarding preventive health. The study was descriptive in design (Polit and Hungler, 1978:24). It explored the research problem: in a rural population, what effects do the independent variables of distance from the nearest health facility, distance from the health facility generally used, annual income per household, and age have on certain behavioral and attitudinal items that are related to preventive health.

Conceptual Framework and Rationale

Webster's New World Dictionary (1968) has defined biological adaptation as a change in structure, function, or form that produces better adjustment of an animal or plant to its environment; sociological adaptation is defined as a change in behavior to conform to cultural patterns. Luckmann and Sorensen (1974:3-16) have elaborated on adaptation as follows: adaptation is a universal characteristic. It separates living organisms from inanimate objects. Human beings have the most complex adaptation, responding to both internal and environmental stresses. Man, a dog, a snail, an amoeba, and all living organisms are composed of cells with some capacity to adapt internally in response to the external environment. What, then, differentiates human beings from other living organisms?

From a sociological viewpoint, each person has experienced dissimilar stresses, traumas, and triumphs. Experiences, along with the manner in which they have viewed themselves and their relationship to the world, have contributed to each person's individuality. Past experiences have played a significant role in determining how persons have chosen to care for their health (Luckmann and Sorensen, 1974).

Sister Callista Roy, registered nurse and educator, (1970) has developed adaptation into a conceptual framework for nurses. Viewing man's life on a health-illness continuum, the nurse assesses the stimuli present and intervenes if necessary to enhance the effectiveness of the person's coping mechanisms.

Roy (Riehl and Roy, 1974) has identified four ways or subsystems by which man has adapted to health and illness. The mechanisms allowing the adaptations to occur have been defined by Roy (Riehl and Roy, 1974) as modes. The modes or interactions provide a tool for the nurse to manipulate the subsystems. The four subsystems include physiologic needs such as maintaining body temperature; self-concept, the way outside stimuli affect adaptation; role function, performance of duties based on positions within society; and interdependence, the manner chosen by persons to seek help, attention, and affection.

Pearlin and Schooler (1978:2) described the related concept of coping as "the things that people do to avoid being harmed by lifestraints." Coping, according to Pearlin and Schooler (1978) protects three ways: it modifies conditions that cause problems; it provides perceptual control of an experience that results in neutralizing the problems; and

it applies manageable bounds on the emotional consequences of problems. Similar to Roy's (Riehl and Roy, 1974) definitions of modes of adaptation, Pearlin and Schooler (1978) defined the following mechanisms of coping: social resources are supports derived from interpersonal networks; psychological resources are the positive and negative attitudes one uses in defense against threats; and mastery is how one views his control over life situations.

Rural persons, unique in their setting, provided the target population for the study. The investigator, having recently been involved in two separate surveys concerning rural health, had noted attitudes of resourcefulness and independence of many of the rural residents with regard to utilization of health services. In the 1970s, when Montana's rural hospitals were threatened by the government with closure in order to provide more efficient and economical services, many Montana citizens rallied to save their community hospitals. A population so resourceful, yet so insistent about keeping hospitals within close proximity aroused the curiosity of the investigator. What type of attitudes and behaviors did this population have that allowed such an adaptation to occur? Could a trend be noted among certain variables? Rural implied distance from urban

settings, and distance, in an era when energy resources were scarce and expensive, could have been significant. From experience the investigator knew that as most persons approached retirement age, they became more concerned about meeting their basic needs with a more limited budget. Therefore, distance from a health facility, income, and age were chosen as possible stressors that may have affected rural persons' adaptation in regard to health care. Since there was a current increased interest in preventive health and self-care practices, it was decided to narrow the broad concept of health to preventive health.

Because of the universality of adaption, and Roy's (Riehl and Roy, 1974) efforts to develop a nursing model based on it, adaptation was used as a conceptual framework to study a rural population's perceptions, attitudes, and behaviors related to preventive health. It is anticipated that the results of this study will add to the knowledge base of those involved with rural health delivery.

CHAPTER 2

REVIEW OF THE LITERATURE

What is Health?

Through a literature search related to preventive health behaviors, four pertinent bodies of literature were identified and will be reviewed. The first area to be reviewed describes the current and varying definitions of health. The second reviews studies which have identified factors which may influence health behavior. The third describes studies which have been done investigating specifically the problems and health behaviors of rural and elderly populations. The fourth body of literature reviewed describes current trends in health education and the role of the consumer.

A variety of definitions exist for health; it is difficult to measure, but most will agree it is the absence of mortality, morbidity, disability, disease, and distress. The World Health Organization has defined health as "a state of complete physical, mental, and social well-being and not merely an absence of disease or infirmity" (Sobel, 1979:395). Eduardo Marenco (1978:31), educator and attorney for Mexican-Americans, described health as emanating from a feeling and

from a state of well-being which flows from different, yet interrelated areas. He specified body health, mental health, and social health; the actors involved included consumers, professionals, policy makers, advisors, and the public-at-large.

In the past fifty years, mind and body were frequently treated as distinct entities, and social environment was of secondary importance. The dichotomy resulted largely from the gains made in medical science and the specific therapies which evolved. In view of important discoveries such as insulin and antibiotics, the practice of medicine became very specific. Mental health and physical health were perceived as unrelated. In recent years, the notion of health being derived from a more holistic approach to man is being revived. Most health care professionals now recognize the importance of the relationships between physical and emotional aspects of health. One example is the therapeutic use of relaxation response to control such stress-related symptoms as hypertension, arrhythmias, and headaches. In addition to controlling such diseases, relaxation or stress reduction is known to be useful in their prevention.

Philip Lee and Patricia Franks (1977:211), working with the Health Policy Program in San Francisco, have taken an even

broader perspective to define health using a systems approach with the following components: 1) biological refers to inherited and acquired host characteristics, 2) behavioral relates to attitudes and reactions that affect lifestyle, 3) sociocultural applies to patterns and conditions within the human community, and (4) environmental refers to general, special, and consumer products.

Defining these biological, sociocultural, behavioral, and environmental factors as determinants of health, they developed a framework to analyze interventions that have an impact on health. The interventions include the following:

1. Health promotion is defined as strengthening the host by appropriate means such as education, improved support systems and adoption of healthful living habits.
2. Health protection means controlling the environment by establishing and enforcing standards for noise pollution, transportation, food and drugs.
3. Health care relates to personal health services including nursing, pharmacologic, and optometric services. These range from health education and information through prevention, diagnoses, treatment and rehabilitation; also included are health manpower and facility construction.
4. Health research is the investigation of a broad range of factors that influence health and disease.

Each intervention, except health research, requires initiative by both the public and the private sectors.

Preventive medicine, preventive health, and health protection are terms that are sometimes used synonymously. Harris and Guten (1979:17) have defined health-protective behavior as "any activity undertaken by a person, believing himself to be healthy, for the purpose of preventing disease or detecting it in an asymptomatic stage." Behaviors can either be those involving contact or compliance with health care professionals or independent ones that persons have learned from other sources of information. Lee and Franks (1977) reiterated the same idea by stating that the concept of preventive medicine includes both specific medical measures and general non-medical measures. Promotion of health as well as prevention of illness, injury, and disease involves responsibilities and decisions from both public and private levels.

Nurses and other health care professionals working in the arena of community health have long been aware of the distinctions which have been made in preventive health. The distinctions include dividing preventive health conceptually into primary, secondary, and tertiary prevention. A recent definition of these terms by Haber, et al. (1978:721-725) is as follows: 1) primary prevention includes the actions taken to reduce the incidence of disease in populations at

risk; it focuses on factors that may be harmful to personal, family, or community systems. 2) Secondary prevention strives to reduce the prevalence of disease through early case finding, referrals, and effective treatment; it may be accomplished by lessening the incidence, shortening the duration, or by preventing the progress of disease. 3) Tertiary prevention aims to reduce disability associated with disease through rehabilitation.

Marvin Kristein (1977:261), of the American Health Foundation, has compared Americans' present health behaviors to littering by declaring, "Like the problem of littering," unhealthy life-styles have an accumulative effect. In cases of overeating, cigarette smoking, lack of exercise, and alcohol abuse, individuals are asked to give up present satisfactions for future benefits. "The chronic disease epidemic effects of our unhealthy lifestyles need to be made more immediate and important to those contributing to the epidemic" (Kristein, 1977:261). Making the problem seem more immediate may provide some motivation toward initiating health protective behaviors.

At the present time, epidemic diseases are less prevalent than life-style induced problems. Heart disease, obesity, grief, loneliness, child abuse, drug and alcohol

abuse, stress illnesses, venereal disease, and road accidents are but a few of today's life-style induced health problems that may be more treatable by preventive and community medicine rather than using a medical model (Preston, 1977).

A national strategy encouraging effective health behavior has been widely discussed, but the fact that "poor health habits" are complex behaviors emanating from socio-cultural, developmental, and biological antecedents has, for the most part, been ignored. "Much of our behavior, whether health relevant or not, arises from a long period of socialization and from the contextual demands of the environments in which we work and play" (Mechanic, 1979:29).

In summary, the need for a definition of health which is broad enough to encompass social as well as physical factors has been discussed. Health is obviously more than the absence of disease; social and environmental factors must also be considered in preventive health care.

Socioeconomic Factors

What effect do socioeconomic factors have on health and preventive health behaviors? This section will review

some of the studies relating health and socioeconomic variables.

Steele and McBroom (1972) studied the effects of social-economic-status, distance from medical care, and incidence of recent illness on health behaviors of rural Montanans. Their investigation found that lower socioeconomic status persons were less likely to engage in preventive health actions than persons of higher status. Physical check-ups, dental visits, eye doctor visits, and health insurance coverage were the behaviors measured. The study also revealed that an increased distance of 10 miles or more from health services did decrease utilization of health services with the exception of dental visits. There was no significant difference in the age groups utilizing the services. In addition, the authors found that higher income was related to the increased likelihood of contact with a physician.

Similar to Steele and McBroom's (1972) findings, Ellenbogen, Ramsey, and Danley (1966) found that income was related to subscription of health insurance; and Mechanic (1968) observed persons of higher socioeconomic status were more likely to participate in preventive health actions. Income is definitely a variable which influences health behaviors.

Victor Fuchs (1979:155), of the Center for Advanced Study in the Behavioral Sciences, has used an economic focus to differentiate between medical care and health. Medical care can be thought of as input, and health, as output. His finding was, "When the state of medical science and other health-determining variables are held constant, the marginal contribution of medical care to health is very small in modern nations." Expressed differently, more physicians, nurses, and hospitals would not improve the health of the population. Fuchs (1979) claimed several reasons were possible for this: if physicians were scarce, they would concentrate on patients needing the most attention; when physicians were more plentiful, they would devote time to patients who needed less attention. Patients alter their behavior according to how easy or difficult it is to see a physician. Interventions such as antibiotics and vaccinations are effective using small amounts of resources compared to complicated surgeries. Iatrogenic diseases are a factor, as well as genetic influences, environment and life-styles.

The reason more emphasis has been placed on expensive treatments that have yielded little in lives saved, while preventive activities with potential to yield more per dollar have been denied resources may be related to the

level of probability. In other words, "people might be more willing to pay for the treatment, if sick, than to pay for the prevention, if well" (Fuchs, 1979:164). According to Fuchs (1979), willingness to pay for the change in probability of survival, would depend upon the value of life.

Kristein (1977), also studying the economic issues of prevention, concluded that certain types of primary and secondary prevention would be profitable for society in general. Included among these are preventive interventions for hypertension, cancer of the colon, epidemiology from heavy cigarette smoking, and alcohol abuse. Such interventions would involve our political, economic, and value systems.

Studying prevention in relation to economics, Kristein (1977) proposed the formula: $\text{net benefit} = (\Delta ME + \Delta L + \Delta W) - C$. The reduction in disease is represented by ΔME ; ΔL represents lengthened life expectance, leading to increased output and incomes, over the lifetimes involved, for the society. The gain in working income due to the reduction in morbidity and its effects on illness and absenteeism is represented by ΔW , and $-C$ represents the cost of the preventive program. The study examined hypertension, cancer of the colon, heavy cigarette smoking, alcohol abuse, and

breast cancer. Kristein (1977) concluded that certain types of primary and secondary prevention would be profitable for society to pursue. Instead of spending large amounts of money on uncommon conditions, such as organ transplants, it was suggested society address the commonplace results of laboratory and clinical research of ten to twenty years ago. Improving housing, education, nutrition and the environment would be less dramatic than organ transplants, but the overall benefits would have effects on a greater number of people. Kristein (1977) has estimated that illness cost 17 percent of the gross national product in 1975, and of the illness costs, 80 percent fell into areas where significant preventive efforts are possible. Examples included circulatory diseases, neoplasms, and accidents which accounted for 50 percent of illness in 1975. Kristein (1977) estimated if improvements were made in these three areas alone, through preventive health action, it would be possible for American citizens to save 6.25 billion dollars annually, plus immeasurable pain and suffering.

Dr. Lawrence Green (1979:58), of the Health, Education, and Welfare Department, has observed a systematic dismantling of public health agencies since the early 1960s. In the late 1960s, family planning was about the only area that received

attention. Eventually that became more medically oriented, once again removing consumer responsibility for personal health care.

Somers (1977:963) claims advocates of prevention have predicted for years that if preventive health was neglected, the cost of curative medicine would skyrocket. They were correct and funds for preventive health, including mental health, are still minimal (2% to 5% of the entire health budget).

Somers (1977:962), reinforced Kristein's (1977) viewpoint with the statement, "We are doing too much for too few, at too great a cost, and with too little benefit." In recent years, with the financial support of Medicare, Medicaid, and private health insurances, tertiary institutions have been expanding while public demand for adequate primary care and long-term care for the elderly and the chronically ill remains unanswered. In 1977, over ninety-one percent of all hospital costs were paid by third parties (Somers, 1977).

The literature review has suggested that economic factors associated with health are extremely important. Some of the studies have noted higher socioeconomic status has a positive influence upon preventive health actions. In addition, modifying lifestyles that enhance unhealthy

behaviors would be difficult but profitable for society to pursue.

The Aged and the Rural Populations

This section of the literature review describes some characteristics of older persons and rural persons. The health needs of the aged and the rural populations have added new dimensions to preventive health.

In a review of recent government and Metropolitan Life Insurance bulletins, Karen Combs (1978:1339-1341), nursing instructor at the University of Wisconsin, has summarized some of the statistics known about the elderly population in the United States. Older adults comprise about 10 percent of the total population; 81 percent have their own households, another 14 percent live in homes with relatives, and 5 percent are institutionalized. Older adults account for 25 percent of all accidental deaths. Chronic illness and nutritional problems also figure significantly among the elderly's health problems. In addition to chronic illness, Roy (1977) has reported the elderly population harbors many of the same acute illnesses that afflict younger groups. Only recently has this been recognized, documented, and reported.

It is not unusual for older persons, beset with chronic illness, inactivity, and dependence, to spend large amounts of time dwelling upon their conditions. In his research on learned helplessness, Seligman (1975) noted persons who lose a sense of control over their environment develop a depressive-like syndrome and suffer physical deterioration.

There is no clear-cut distinction between rural and urban. Statisticians, however, tend to use 50,000 or more for an urban population figure (Copp, 1976). The agricultural population is found principally within the rural census. Most rural persons, however, are not affiliated with agriculture or farming (Copp, 1976).

Using results of 1970, 1972, and 1974 national health surveys, Copp (1976:28) summarized that rural populations have lower morbidity rates than metropolitan and non-farm, non-metropolitan persons even while having a greater share of low-income families, more elderly, and more persons with lower educational attainment. According to Lane (1976), white collar workers had higher health insurance coverage rates than blue collar workers, and the farm population was most likely to be without insurance.

Hassinger (1976:166) reported the median family income in metropolitan areas in 1970 was \$11,203; for non-farm

families in non-metropolitan areas, \$8,881; and for farm families in non-metropolitan areas, \$6,819. He reviewed findings of the National Health Survey and noted lower income persons have more illness and obtain fewer health services.

Crawford (1976) has noted primary care is more common in rural areas than secondary or tertiary care which involves more complicated diagnoses and procedures. However, secondary care is often times found in community hospitals, while tertiary care generally is provided in urban settings. According to Somers (1977), since the majority of medical students' clinical experience occurs in hospitals, they are generally more attuned to tertiary care, and all too often the focus of attention has been on that area rather than on primary prevention.

In the eastern United States, practically no one is more than 100 miles away from a health facility; the same is not true in western United States (Hassinger, 1976). The rural individual must go increasingly long distances to get specialized care when, the more complicated his illness, the more likely he is to be financially stressed and disinterested in travel or separation from his home surroundings.

Rural people are noted for residual stability. Any changes usually occur slowly through the attrition of out-migration and time rather than from a sudden influx of new persons (Copp, 1976:28). Rural social structures have a higher resistance to changes that come from the outside, because of the tendency to remain self-sufficient. These sociological barriers to change could impose more obstruction in delivering health care than the maldistribution of health professionals. "Rural communities are accustomed to purposefully making decisions about what they will and will not use in community resources to accomplish tasks" (Wilson, 1976:270).

Perlmutter (1979) studied the prevention programs in 43 areas in eastern states, and compared the 13 rural areas with the 30 non-rural areas. It was determined educational consultation leadership was lacking in the rural areas, and prevention, as a concept, had a low priority. Similarly, Crawford (1976:133) has stated, "Many recognize the need for health education, but its integration into primary care programs in rural areas needs considerable strengthening." He noted it has been found wise to begin initial educational consultation work around a small group of high status lay people, and to build around the existing structures in rural

areas. Any changes attempted in rural community health delivery must be accompanied by infinite patience.

This section of the literature review has examined studies of older persons' and rural persons' health needs. The rural population generally has less education, less income, and more elderly persons. They are more resourceful, and therefore, more resistant to change. Older persons often suffer from chronic illness that requires extended care. More emphasis has been placed on tertiary care than on primary or secondary prevention. With an increasing proportion of elderly in the population, pressures for change are inevitable.

Health Education and the Self-Care Concept

One way to promote change is through education. The purpose of the following section of the literature review is to examine education as it relates to health.

A variety of ways have been used in the past to measure health. These have included morbidity, mortality, symptoms, and subjective evaluation. The most powerful correlate of good health usually has been education. The reasons why schooling contributes to health have never been explained. It is thought that more educated persons select healthier

diets, have healthier occupations, and use the medical system more wisely (Fuchs, 1979).

According to Mechanic (1979:50), "Most health education programs attempt to influence the way the individual calculates the risks of an illness, the probability that he or she is vulnerable, and the benefits of taking recommended actions." Some health educators believe additional forces are necessary to motivate individuals to learn. Cues might include knowledge about preventive services, interpersonal contact or a family member contracting a disease. It is known that fear tactics have limited value in long-term behavior changes. For example, Evans (1978) found that more detailed and direct information on oral hygiene was more effective in creating a desirable behavior change than communications which stressed fear. Fear also has a limited value in motivating people, especially if problem-solving alternatives are lacking. Failure to provide alternatives reduces individuals' coping skills.

Mechanic (1979) has recognized that healthful behavior is more likely to occur if it is reinforced by supportive groups, peer pressures, media, and other community influences. An example of a useful constraint on a harmful behavior has been demonstrated in restricted smoking areas.

Instead of non-smokers assuming a defensive role, smokers have become more apologetic. "How to develop social constraints affecting harmful behaviors without inflicting undue pain on individuals who cannot help themselves or without seriously interfering with their right to choose their own lifestyle, is an important issue" (Mechanic, 1979:29).

Education's increased focus on health behavior has had some impact. For example, while smoking among teenage girls has increased, overall smoking has declined (Mechanic, 1979). Interest has also increased in nutrition, stress reduction, exercise, and emotional growth. It is reasonable to think about education as the vehicle with the potential to create health behavior changes. Clinicians have used health education in conjunction with organizational, political and economic interventions to influence community and family networks, and the institutions in which people attempt to exercise their rights and their responsibilities.

Education is inherent in Mechanic's (1979) study which suggests one way to reduce expenditures for medical care is to limit the needs and desires among patients for medical care. Reducing needs involves prevention of illness and reducing psychological dependence upon the medical system.

He has described three aspects of prevention:

1. Standards of living, education, nutrition, environment, employment, and social conditions affect everyone.
2. Identifying risk factors and motivating people to minimize them deals directly with peoples' habits, and these are difficult to change.
3. Finally, modifying the culture of medical care by changing the consumers' expectations of the health care system will reduce demands on it.

According to Marengo (1978), health education is the co-ordinating mechanism within a client-oriented context. It interfaces between health and policy experts' opinions one way, and consumers' and societal demands another way. It becomes the facilitator of health for the consumer.

Self-care and self-help have been defined by Butler, et al. (1979-1980). They conceptualized self-care as a series of concentric circles. The inner circle included daily living activities, such as hygiene, nutrition, and first-aid. The second ring included preventive health care and involved vehicles such as magazines, television, and pamphlets. In the outermost ring, the individual assumed tasks formerly in the domain of the professional care giver. The outer ring involved more education, and included skills such as taking a blood pressure. Persons banded together

for mutual support, such as jogging and dieting, is an example of self-help group.

There are approximately 500,000 self-help groups in existence today, with 5,000,000 members. The current members compare with a very low number of groups in the 1940s and the 1950s. They abound for almost every conceivable need such as alcoholism, smoking and loneliness. It is estimated that 85 percent of all health care in the world is handled through self-care practices, thereby saving the health care system from being swamped Butler, et al. (1979-1980).

The consulting firm of Arthur D. Little, Inc. (ADL) inventoried scores of consumer health education programs. Sixteen programs fit ADL's definition of self-care: consumer performance of activities traditionally performed by providers. Six of the sixteen were declared "comprehensive" self-care programs, teaching a wide variety of skills. ADL contends comprehensive self-care programs represent "a new trend in consumer health education" Butler, et al. (1979-1980:97).

According to Butler, et al. (1979-1980:101), the current enthusiasms for self-care and self-help seems to be the result of several social currents:

1. The client-consumer is demanding greater control over his own destiny.
2. The counter-culture is interested in self-reliance and having control of their lives.
3. Medical care is too costly and too scarce.
4. Some view the self-care/self-help movement as a crusade to right wrongs.
5. The allied health manpower movement has eroded physicians' "monopoly" over diagnostic and therapeutic functions.
6. Public education through the media has brought knowledge to more people.
7. Disease patterns have shifted from 30 percent chronic 50 years ago, to 80 percent chronic today.
8. There is more emphasis on prevention of disease.

The public's new and emerging attitudes, values, and norms regarding quality of health care and control over personal health decisions, along with a more complex environment is leading to a changing relationship between patients and physicians (Green, 1979). As a result of the consumer movement, various Montana hospitals are preparing to expand their roles to include home health, and the board of governors of the National Blue Cross has approved the idea of reimbursement for the health education of patients. The Montana Blue Cross became the first to endorse the

recommendation, in 1975, when they authorized reimbursement for diabetic education Butler, et al. (1979-1980:104).

For a quarter century, after World War II, people were led to believe that an external body such as the government, the hospital, the Health Maintenance Organizations, the neighborhood health facility, the American Medical Association, or someone, was responsible for personal health or the lack of it. We now know that the ultimate responsibility rests with the individual consumer. Health cannot be given to people; it demands their participation (Green, 1979).

Summary

The literature search revealed that health is an encompassing word; it includes biological, behavioral, sociocultural, economic, and environmental components. For human beings, adaptation relating to these health components has occurred at all levels.

Economists have studied the health care concept and have concluded preventive health would be profitable for society to pursue, but various factors have been operating within the consumer group that hinder interest in and utilization of preventive health services. Not only do these include the definite characteristics of distance from health

services, income, and age, but also, the intricate values that persons have placed upon their lives.

The aged, with their increased numbers and additional demands upon society, have recently been gaining more attention from the health system. Many have refused to "act-out" the stereotyped geriatric role; they have adapted by continuing or resuming more active lifestyles.

Rural families, accustomed to more isolation and non-steady incomes, have historically utilized the health system less frequently than urban persons. Noted for being self-sufficient, the rural population presents special challenges to educators who may aspire to change health attitudes and/or behaviors.

How and why people learn have been studied for years. The provision of direct information has been found to be one of the more effective ways to create behavior changes, however, educational consultation leadership has been found lacking in rural areas. The consumer movement has responded to current health issues and is forcing changes to occur. Since people are becoming more accountable for their health, the medical profession has had to change, also, to accommodate more responsible patients or consumers.

The subsystems Roy (Riehl and Roy, 1974) identified, by which man adapts, have been evident in the literature review. The examples have included how persons of lower socioeconomic status have adapted by less participation or interdependence upon preventive health action. Self-concept and role function have been important in the aged adaptation process. Their declining health often has created more dependence upon health professionals. Many rural persons have lower incomes, lower educational attainment, and a more independent self-concept. As a result, their health adaptation has emphasized primary prevention rather than secondary or tertiary prevention. Finally, the consumer movement has created dramatic adaptations in the health field. Many of the changes can be attributed to education that has occurred in self-care and self-help groups.

CHAPTER 3

METHODOLOGY

The purpose of this study was to determine if relationships existed between preventive health behaviors and attitudes, and the variables of distance from health services, income per household, and age. The setting was rural Montana. This chapter specifically discusses the instrument, the sample, the definitions of the terms, and the procedure and analysis.

Design and Selection of Variables

The study was designed as an exploratory-descriptive survey of a rural population's behaviors and attitudes concerning preventive health. Since no satisfactory instrument was found to measure a combination of pre-selected behaviors and attitudes, a questionnaire was devised. Several questions were included to measure the independent variables of distance from health facilities, income per household, and age, against the dependent behavior and attitude variables. Each question was self-explanatory. Several opportunities were provided for respondents to write in answers that may have been more appropriate. Validity and reliability were

not tested. However, 21 persons completed a pilot study of the original instrument which resulted in minor modifications of the tool.

Data Collection Instrument

The data collection instrument was a questionnaire designed to move from self-perceptions of preventive health into more specific opinions about preventive health. Preventive health included behaviors and attitudes that involved the medical profession, and behaviors and attitudes that did not involve the medical profession. Demographic questions solicited information regarding education, sex, number of people in household, and number of years of residency in a rural area. The major part of the questionnaire used a Likert scale in a matrix format to measure levels of importance and/or frequency of health behavior occurrence (Polit and Hungler, 1978). A small number of dichotomous questions were used to measure agreement or disagreement. Two open-ended questions were included to solicit participants' perceptions of preventive health behaviors and attitudes toward health topics of interest.

Selection of Sample

Because Montana is a large rural state with diverse characteristics, a combination sampling method was chosen that would allow inclusion of the more populated mountainous west and the less populated plains of the east. For convenience, names and addresses were obtained from recent telephone directories that represented towns and areas scattered throughout the state. Billings, Great Falls, and Missoula were excluded because of their larger populations.

The state was then divided into approximate areas of northwest, midwest, southwest, northcentral, southcentral, northeast, and southeast. The names of three communities from each of these 7 regional divisions were randomly chosen from entries in the directories. Ten names were then selected from each area. In order to avoid starting with the first entry under the letter, A, each time, the 26 alphabet letters were randomly chosen, also, to determine the starting point in the directories. With the first community chosen, every second name with a significant address was used; with the second community chosen, every tenth name with a significant address was used. Several listings in the telephone directories did not have any addresses except the name of the town, so a significant address was determined

to be a street number or a rural route designation if the area had a population of 3,000 or more. Business listings were omitted. The pattern was repeated until the 21 communities were completed.

Because funding was limited to the investigator, the sample was restricted to 210. Each questionnaire was prefaced with a cover letter (Appendix A) which explained the purpose of the study, confidentiality, and how the results would be used. Return of the questionnaire in the pre-addressed, stamped envelope, which was included, gave the investigator permission to include the results in the final statistics.

Definition of Terms

1. Distance: approximate distance of residence from the nearest health facility, and approximate distance of residence from the health facility generally used.
2. Income: categorization of household income into annual approximations of:
 - \$ 6,000 or less
 - \$ 6,001 to \$10,000
 - \$10,001 to \$15,000
 - \$15,000 to \$20,000
 - \$20,001 to \$24,000
 - \$24,001 or over
3. Age: categorization of adults into young adults (18 to 35), middle-age adults (36 to 55), and advanced age adults (56 or older).

4. Rural: any geographic area in Montana exclusive of the population within the metropolitan areas of Billings, Missoula, and Great Falls.
5. Preventive Health: activity undertaken in an asymptomatic or symptomatic state for the purpose of reducing the incidence of disease, reducing the prevalence of disease, or reducing the disability associated with disease.
 - a. Preventive Health Behavior: action or conduct that persons engage in for the intention of minimizing the occurrence of disease, reducing the prevalence of disease, or lessening disability associated with disease.
 - b. Preventive Health Attitudes: a manner of feeling or thinking that reveals one's opinion about factors that relate to minimizing the occurrence of disease, reducing the prevalence of disease, or lessening disability associated with disease.

Procedure and Analysis

The dependent variables were categorized as behaviors or attitudes, and measured separately against the independent variables of distance from health facilities, income per household, and age. The bivariate tables were created and tested for significance using Cramer's V. A small number of demographic or organismic variables, as defined by Treece and Treece (1977:122), were included in the cross tabulations to determine their influence upon the outcome. The demographic/organismic variables were also used as supporting data for the specific behavioral and attitudinal items

that were cross tabulated with the distance, income, and age variables. The reader is requested to refer to Appendix B for the exact wording and format of the questionnaire. The dependent behavioral variables were as follows:

1. If you agree (regular physical check-ups are important to try to prevent health problems), do you have regular check-ups? (Appendix B, question 3).
2. If you had a medical problem that could be treated adequately by any one of the following methods, which method would you prefer?
3. If you had a medical problem that could be treated adequately by any one of the following methods, which method would you prefer?
 - a. Control the condition with diet and/or exercise.
 - b. Treatment with medication including follow-up by a physician.
 - c. Surgical intervention with short-term follow-up.
 - d. Consult pharmacist and use over-the-counter medications.

(Respondents were asked to select first, second, third, and fourth choice, Appendix B, question 5).

4. How often do health professionals provide medical information for you? (Appendix B, question 6).
5. Do you have health insurance? (Appendix B, question 24).

The dependent attitudinal variables were as follows:

1. If you chose to see a professional about a mental health problem, would the expenses involved be important? (Appendix B, question 8).
2. If nurses offered health-related classes, would the expenses involved be important? (Appendix B, question 10).
3. If health care were available for very low cost or no cost, would you be likely to visit health professionals more than you do now? (Appendix B, question 14).

4. Are you in favor of government-paid health coverage? (Appendix B, question 15).
5. Would you be interested in health services that are offered at reduced prices? (Appendix B, question 12).

The independent variables included:

1. Approximately how many miles is the nearest health care facility from where you live? (Actual miles respondents gave were collapsed into 1.0 mile or less, 1.1 miles to 5 miles, 5.1 miles to 20 miles, 20.1 miles or over, Appendix B, question 22).
2. If this (nearest health facility) is not the health facility you generally use, how far do you go for health care? (Actual miles respondents gave were collapsed into 20 miles or less, 20 miles to 50 miles, 50 miles to 75 miles, over 75 miles, Appendix B, question 23).
3. What is your approximate annual gross income?
The following selections were offered:
 - a. \$ 6,000 or more.
 - b. \$ 6,001 to \$10,000
 - c. \$10,001 to \$15,000
 - d. \$15,001 to \$20,000
 - e. \$20,001 to \$24,000
 - f. Over \$24,000
 (Appendix B, question 25).

The remaining variables that solicited demographic, environmental, and other supportive data included:

1. What are the three most important things you do to protect your health or your family's health? (Open-ended question; Appendix B, question 1).
2. Approximately how often do you seek advice or treatment from health professionals? (Nine health professionals were listed and 5 time intervals; Appendix B, question 2).
3. Do you believe regular physical check-ups are important to try to prevent health problems? (Appendix B, question 3).

4. If you visit a health professional after a problem develops rather than before, please check the answers that best describe your reasons. (Seven answers were given and 3 opinions; Appendix B, question 4).
5. How often do various sources provide medical information for you? (Five sources were offered and 4 time intervals; Appendix B, question 6).
6. Do you believe emotional problems can be successfully treated by a health professional? (Appendix B, question 7).
7. If you chose to see a professional about a mental health problem how would you rate the following for importance? (Four selections were given and 3 opinions; Appendix B, question 8).
8. Are you aware of any health classes that have been offered in your area within the past year? (Appendix B, question 9).
9. If nurses offered health-related classes, how important would the following be to you? (Five selections were given and 3 opinions; Appendix B, question 10).
10. What health related subjects interest you? (Open-ended question; Appendix B, question 11).
11. Please rank the following budget priorities. (Eight selections were given and 3 opinions; Appendix B, question 13).
12. What is your sex? (Appendix B, question 17).
13. How many people live in your household? (Appendix B, question 18).
14. How many years have you lived in a community or area of less than 40,000 population? (Appendix B, question 19).
15. What is the last year of school you completed? (Appendix B, question 20).
16. What is your occupation? (Appendix B, question 21).
17. If you have health insurance, does it pay for physical examinations in a clinic or office? (Appendix B, question 24b).

The present chapter has included a description of the instrument, the sample, the definition of terms, and the procedure and analysis. The following chapter discusses the results obtained from utilization of the instrument.

CHAPTER 4

FINDINGS

Interpretation and Discussion of Findings

The present research was a descriptive-exploratory study. Distance from the nearest health facility, distance from the health facility generally utilized, income per household, and age, were the independent variables thought to influence the dependent behavioral and attitudinal items. The data were analyzed from bivariate tables, with Cramer's V used to determine if the relationships were significant.

The reader is requested to refer to Appendix B for actual wording and format of the questionnaire. In reporting the findings, the investigator rounded percentages to the nearest tenth. In some instances, where the independent variables had more than one category, the percentages were averaged. A description of the sample, data relevant to preventive health behaviors, data relevant to preventive health attitudes, supportive data, and limitations of the study are included in this chapter.

Description of the Sample

Forty-five percent (N=94) of the 210 mailed questionnaires were returned. A description of the sample included the following characteristics: 49 percent were answered by males, 51 percent were answered by females. The largest percentage of the respondents were housewives (30%), followed by skilled/semiskilled persons (22%), farmers/ranchers (19%), retired (15%), and professional (14%). Thirty-two percent of the sample had a high school education, with an additional 46 percent having indicated their education extended beyond high school.

Continuing with a description of the sample, the most frequent response to the question that asked for the number of persons that lived in the household was from 20 percent of the sample who responded, four persons per household. Of those in the low income group, 60 percent responded that they lived in a single person household, 20 percent indicated there were two persons per household, 10 percent had three persons per household, and 10 percent had four persons per household. Sixty-two percent of the respondents had lived in a rural community 30 years or longer. This finding agrees with Copp's (1976) statement that the rural population changes slowly.

Ninety-one respondents answered the question regarding distance from the nearest health facility. Fifty percent lived less than 20 miles from the nearest health facility, and 50 percent lived over 20 miles from the nearest health facility. Forty-four persons replied that they were used to utilizing a health facility other than the one nearest to their residence. Of the forty-four, 36 percent were used to traveling less than 50 miles to their usual health facility, and 64 percent stated that they traveled over 50 miles to their usual health facility. If a line were drawn from eastern North Dakota to western Texas, the area west would have numerous places with health facilities located more than 100 miles from rural residents (Hassinger, 1976). The figures from the present study suggest a large number of rural Montana residents do travel long distances to obtain health care.

Considering the income and age categories in the description of the sample, the respondents were almost evenly divided into three groups. Thirty-two percent reported annual earnings of \$10,000 or less per household; 36 percent earned \$10,000 to \$20,000 a year per household; and 32 percent earned \$20,000 or more a year per household. The medium income for the three groups was \$10,000 to \$15,000

per year per household. Of the 94 respondents, 30 were young adults (18-35); 30 were middle aged (36-55); and 34 were advanced aged (56 or older). Of those who reported annual household earnings of \$6,000 or less, 80 percent were aged 56 or older. This finding agrees with Copp's (1976) statement, that low incomes prevail among the rural aged.

Data Related to Preventive Health Behavior

The behavioral variables presented in the following section have been cross tabulated with distance from the nearest health facility, distance from the health facility generally utilized, income per household, and age. None of the relationships were significant at the .05 level of confidence.

Table 1 summarized the findings relating distance to health facilities, income, and age to the preventive health practice of having a regular physical exam. A slight trend was noticeable in relation to income; households that earned \$10,000 or less per year (44%), were the least likely to have had regular check-ups. It is reasonable to assume low income groups would place less priority of this more costly form of preventive health behavior than higher income groups. The income relationship agrees with Mechanic's

