Rural-urban characteristics, resource needs and life-style changes after coronary artery bypass surgery by Margaret Ann McNeil Taulbee

A thesis submitted in partial fulfillment of the requirements for the degree of MASTER OF NURSING
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Abstract:
The purpose of the study was to examine the influence of place of residence on life-style change, lay resource use, and further information needs after coronary artery bypass surgery. Rural and urban residents made up the sample.

A mailed questionnaire, designed by the researcher, was utilized for collection of data. The questionnaire included items measuring change in activity and work, extent of compliance with instructions, knowledge, use of resource persons, and areas of perceived need for further information. The questionnaire was mailed to 150 patients who had their surgery during the past one and one-half years.

There were significant differences between the rural and urban groups on 1) plans to return to work in the future and 2) the type of work done now as compared to before surgery. Further, there was a significant difference for use of the county health nurse as a resource. There were no other significant differences between the groups.

The data was re-examined utilizing four groups, defined on the basis of population and distance from the hospital where surgery was performed. The groups were labelled urban near, rural near, urban far and rural far. When the data was re-analyzed using the four groups, the analysis showed that the rural far group possessed different characteristics than the other three. The areas of difference were in work and activity change, extent of compliance with exercise, and knowledge. The rural far group appeared to be more active, but less knowledgeable, and their compliance with exercise instructions was lower than the other three groups.

It was concluded that the rural far group had different learning needs than the other three groups. Exercise and activity limits and instructions are the areas of need for the rural far group. Furthermore, available resources for the rural far group need to be improved.

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RURAL-URBAN CHARACTERISTICS, RESOURCE NEEDS AND LIFE-STYLE CHANGES AFTER CORONARY ARTERY BYPASS SURGERY

by

MARGARET ANN TAULBEE

A thesis submitted in partial fulfillment
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Approved:

Ruth S. Fridemann
Chairperson, Graduate Committee

Anna M. Shannon
Head, Major Department

Michael P. Malone
Graduate Dean

MONTANA STATE UNIVERSITY
Bozeman, Montana

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CHAPTER I

INTRODUCTION

Coronary artery bypass surgery is becoming a more frequent alternative to medical management of coronary artery disease. "Over 50,000 Americans and 4,000 Canadians have coronary bypass surgery every year (Cromwell et.al., 1980: 34)." Because coronary artery disease develops as a result of detrimental life-styles, the surgery will not affect a "cure" if the patient resumes those same life-styles after surgery.

Patient education is an inherent part of most rehabilitation programs following coronary bypass surgery. The aim of most programs is to prepare the patient for his home care, and to attempt to change his life-style to prevent further development of heart disease. Some of the more important changes in life-style may include increasing exercise levels, eating less saturated fat, maintaining optimal weight, and taking more medications. However, no studies have been done to determine if the education does in fact lead to positive changes in life-style.

Evaluation of the effectiveness of education in promoting life-style changes is difficult to perform. However,

this evaluation is a necessity if education programs are to meet the needs of the population they are developed to serve.

Statement of the Problem

Patient education is considered by most nurses to fall within the realm of nursing responsibility. Health professionals are increasingly recognizing that patients will recover more quickly from an illness or surgery if they are encouraged to assume a greater portion of responsibility for their own care. In order to help patients understand why it is necessary for them to assume this responsibility, they must be taught about bodily needs and functions (Fuerst and Wolff, 1969:52-59). Nurses are often in the position to provide this information, in either a structured or an informal manner.

Although patient education has occurred for several years on the informal level, it is now receiving increasing attention as a formalized function of nursing in many hospitals. In 1974 a national Task Force was established to study the impact and future focus of both hospital- and community-based education. The Task Force found that "a large proportion of patient education is done on an informal

one-to-one basis" by various health professionals, including nurses (Somers, 1976:19). However, the Task Force concluded that much of this education is neither in-depth nor adequately followed up. In addition, both quality and content were found to vary widely.

In response to the public's heightened interest in learning more about their health, hospitals are establishing departments whose sole function is the direction and delivery of patient education. As more people demand this information and departments develop to provide it, evaluation of the programs becomes paramount. However, the Task Force concluded that, in many situations, it is extremely difficult to provide this evaluation (Somers, 1976:56). Despite the difficulty of the evaluation task, it is one that must be undertaken, if patient education programs are to continue to improve.

Patient education programs have thus far been mostly directed at chronic illnesses such as diabetes, hypertension and cardiovascular diseases; at preparation for childbirth; and at preparation for surgery. These programs are generally well-developed and administered to a large population (Somers, 1976:20). Due to the fact that the potential population is large and varied, the programs offer little

opportunity for individualization. However, according to Tobin, et al. (1979:77) "adults need or want to learn such a wide variety of things that it is sometimes difficult to provide group instruction. This variance must be recognized if each learner's needs are to be met."

H. L. Miller has identified three characteristics of adult learners. The first characteristic is that a group of adult learners is heterogeneous, or does not have very similar backgrounds. This may mean such things as ethnic, social and economic variations. The second characteristic is that differing past experiences give individuals differing expectations, which may influence the present learning situation. Finally, adults respond in more independent ways than do children, and wish to assist in identifying problems and solutions (Miller, 1964). Concepts of adult learning such as these need to be considered in planning and implementing a patient education program.

The effectiveness of patient teaching thus depends on many different factors. Some of the influencing factors have been identified and investigated; others have not yet been explored. One of the influencing variables which may be of considerable importance but which has not yet been adequately investigated is that of residence, namely whether

the patient lives in a rural or an urban area. In a health care delivery area that serves both a rural and an urban population, this variable could have considerable impact on patient education.

Rural-urban differences are one area of study in the field of sociology. For example, in a study done by Glenn and Hill, they concluded that rural-urban differences in attitudes and behavior do exist, although the importance of these differences should not be exaggeraged (1977:50). According to Kane, (1977:138), people in rural areas seem to have more chronic illness than those in urban areas. In addition, income levels are lower and proportions of elderly are higher in rural areas. Kane concluded that a possible reason for these differences is a greater sense of self-sufficiency among rural people. If a patient education program is serving a population which includes rural people, these differences in attitudes and behaviors could present one more variable to be considered in planning the programs.

Purpose of this Study

The purpose of this study has been to investigate the influence of place of residence upon patient education received during a hospitalization for coronary artery bypass

surgery. The study is a descriptive-survey design, with data obtained by use of a mailed questionnarie. It deals with the influence of the rural-urban variable upon life-style changes after patient education, utilization of lay resource people by the two groups, and further needs for patient education information in the two groups.

Summary

Coronary disease is now, and will undoubtedly continue to be one of the major causes of death in the United States. One form of treatment aimed at lowering the rate of death is the coronary artery bypass surgical procedure. However, even when surgery is performed, the patient must still change those behaviors which caused the disease initially. Failure to change them will result in development of further disease. Patient education has as one of its goals the facilitation of these behavior changes. However, many factors enter into whether the patient has not only learned the information, but also incorporated it into daily life-style changes. Variables such as anxiety, perceived need for change, presence or absence of reinforcement, motivation, and opportunity to define problems and solutions all enter into the learning situation, and have been fairly

well defined by previous research. People who live in rural areas have different past experiences, and even different attitudes than urban dwellers. The variable of place of residence has not been investigated in relation to learning yet. Therefore, this study has attempted to determine its influence on learning and behavior change.

CHAPTER 2

REVIEW OF LITERATURE

The purpose of the review of literature was to: 1) determine the extent and type of studies already done on patient education, with an emphasis on those studies related to coronary disease; 2) clarify what constituted rural and urban differences, especially in attitudes and behavior; and 3) develop a conceptual framework based upon adult learning theory and individual differences in the learning situation.

Patient Education

The topic of patient education has received considerable attention in recent literature. Three main areas of focus were identified during the literature search. One area was the reporting of programs in patient education at various institutions. The second area of focus was the evaluation of various teaching strategies and audiovisual aids. Finally, different means of evaluating program effectiveness were reported. Very few of the publications involved research of the variables acting in the learning

situation. Most simply report the impressions of those involved with the programs.

An in-hospital cardiac patient education program has been described by Woske and Kratzer (1977:25-26). In their program they initially trained the nurses on the cardiac unit to be teachers, and the nurses then taught the patients in groups and individually. A multidisciplinary team planned the program. Audio-visual aids, handouts, and flip-charts were utilized as teaching aids. The program used a post-test for evaluation purposes, with home visits one week and two to four weeks post-discharge. The report of program effectiveness was the statement that no one had ever failed the post-test. Evaluation was not reported on the home visits made.

Duncan, et al. (1973:508-11) have described the establishment of an in-hospital program to teach post-myocardial infarction patients. Content included heart disease, risk factors, diet, activity, and medications. No method of program evaluation was described.

Stockwell and Iada (1976:2205) have described two in-hospital cardiac education programs. The goal of their programs was:

> to educate cardiac patients and their families about the nature of the disease, to help them lead productive lives, and to establish a positive emphasis on health (1976:22).

A cardiac rehabilitation program for postmyocardial and postcardiotomy patients has been reported by Owens, et al. (1978:148-50). Hospitalized cardiac patients were given an education program covering a variety of topics. The education was done in a group setting, with individual needs met on a one-to-one basis. Evaluation was by means of a pre- and post-test, and home visits at three and six months. Significant increases in knowledge, at the .05 level, were found amoung the subjects. In addition, it was found "that patients are capable of learning during the early stages of recovery," that "patients are able to learn in a group," and that "discussion groups appeared to generate a sense of cohesion and reduce anxiety levels among the members (1978:150)."

There are also reports of post-hospitalization programs for health education. One such program was reported by Kelsey and Beamer (1973:512-14) and describes the establishment of myocardial infarction groups for pre- and post-myocardial infarction patients. The program built on the education begun in the hospital. The authors state

"prevention is the long-range goal and education is essential to prevention (1973:513)."

Boisoert (1976:26-7) has described a post-hospital group teaching program for post-coronary artery bypass patients. She found that ". . . patients were more receptive to information after their return home (1976:27)."

A frequently cited study dealing with two different teaching strategies was reported by Lindeman (1973:515-21). She discussed the results of her studies in pre-operative patient education. In the first study, she examined the effects of structured and unstructured pre-operative teaching. Her findings demonstrated that structured teaching significantly improved the ability of the subjects to deep breathe and cough post-operatively. It was also shown that the structured teaching decreased the mean length of the hospital stay. In her second study, she explored the effects of group and individual instruction on the pre-operative patients. Group instruction was found to be equally as effective and more efficient than individual instruction.

Different types of teaching aids have also been studied. A report that discusses the use, construction, and advantages of flipcharts as one audiovisual tool in patient

education was published by Wortman (1978:16-18+). Another article by Cartwright (1978:18-20) discussed the establishment and use of closed circuit television in a hospital for patient and staff education. The use of heart models and a mock-up of the recovery room as aids in pre-operative teaching of the cardiovascular patient has been described by DeVillier (1973:522-25).

A study of two teaching formats--structured and unstructured--for teaching post-myocardial infarction patients showed that patients learn nearly as well in either format, contrary to the Lindeman findings. Although the knowledge test scores in the group that received structured teaching were slightly higher, the difference was not statistically significant. Also in this study the authors concluded that

> one means of establishing the effectiveness of the teaching might be the collection of data on how well the patient follows his doctor's orders when he gets home (Bille, 1977:55).

Therefore, they studied the correlation between compliance and knowledge. However, the correlation was not statistically significant. Apparently compliance with the treatment regimen is not significantly related to the amount of knowledge possessed by the patient about his disease.

Because there are so many variables that may affect compliance, studies have been done by at least ten researchers to determine the amount that each variable contributes to non-compliant behavior. According to Marston (1977), demographic variables such as age, sex, socio-economic status, education, race, religion, and marital status are rarely predictive of compliance. Due to the complexity of the issue of compliance, the study by Bille may have involved intervening variables in the knowledge-compliance relationship.

It was recognized by this investigator that the Bille (1977) study had been unable to show an association between knowledge and compliance. Therefore it was decided not to attempt to study that association in this study. Instead, the influence of the affective domain, that is attitudes and values, was chosen to test in association with knowledge and with compliance in a group of rural and a group of urban residents.

In a study by Linde and Janz (1979:282-86), the effectiveness of the teaching program was evaluated on the basis of knowledge and compliance in a group of cardiac patients. Knowledge and compliance were measured pre-operatively, post-operatively, and post-discharge. It was found that

knowledge was significantly increased from the pre-operative to the post-operative tests, and remained stable through two post-discharge tests. Compliance was also reported to be higher than in previous untaught groups of cardiac patients. No attempt was made to assess the correlation between knowledge and compliance as in the Bille study. The researchers concluded that "a comprehensive patient education program has a positive influence on patient knowledge and compliance (1979:286)."

Another method of evaluating program effectiveness was reported concerning a post-hospital teaching/support program "basically designed to meet the health education needs of cardiac patients and their families following hospitalization (Jessop, 1976:18)." This program was evaluated by 1) comparing readmission rates within the first eight weeks post-discharge both before and after the program was begun; 2) measuring the attainment of program oriented goals; and 3) patient self-evaluations. The findings were that patient satisfaction increased with the ability to care for themselves, as well as that the readmission rate was reduced after institution of the program.

One method of program evaluation gaining in popularity is evaluation which includes measures of cost effectiveness.

It is claimed that health education can reduce the problem of broken appointments, reduce unpaid bills, reduce malpractice suits, gain community support for hospital programs, improve and speed diagnosis, improve patient compliance, and reduce morbidity and mortality (Green, 1976:57-61). From the perspective of hospital and health services administrations, there appear to be several benefits of health education, some of them strictly monetary.

Rural and Urban Differences

In spite of all the recent literature on patient education, there is a noticeable lack of studies concerned with the individual differences in the learner. One potential difference that may or may not influence the learner's acceptance and incorporation of the educational material into his life-style is the values associated with place of residence, specifically a rural or an urban area.

Rural-urban differences are one area of study in the field of sociology. In the past four to five years there have been arguments about whether real differences do in fact exist between rural and urban populations. Another difficulty in this area is operationally defining rural and urban, and then measuring the attitudes and values

associated with each group. In past years, only farmers were considered rural, and all others were urban. Due to the decreases in the number of farmers in recent years, this may be a less functional definition at present.

Despite the controversy, some common characteristics of different rural societies have been identified. "Rural" usually means low population density, and greater distances between people and the goods and services they require. In addition, there are some demographic similarities. There are exceptions, but generally

> . . . rural areas have proportionally more poverty, and populations with lower educational attainments, higher unemployment rates, more unskilled and semi-skilled workers, less diversity of occupations, fewer professionals, and more elderly people than metropolitan areas (Blake, 1978:26).

Glenn and Hill in a study of rural-urban differences in attitudes and behavior, concluded that rural-urban differences in attitudes and behavior do exist, although the importance of these differences should not be exaggerated (1977:50). It was found that farmers, as a whole, are

> . . . relatively prejudiced, ethnocentric, isolationist, intolerant of deviance, opposed to civil liberties, distrustful of people, traditionally religious, ascetic, work-oriented, Puritanical, uninformed, and favorable to early marriage and high fertility (1977:39, 41).

In addition to attitudinal and value differences, some differences in disease patterns have been noted between rural and urban residents. These are not entirely separate from attitudinal differences however. According to Kane (1977:138), people in rural areas have a higher incidence of chronic disease and less acute illness than those in urban areas. In addition, there is a higher proportion of elderly in rural areas, and income levels are lower there. Kane states that

> . . . the findings are consistent with the greater sense of self-sufficiency usually found among rural people. They seem to be less readily disabled by illness and less prone to seek medical care for many conditions (1977:138).

People in rural areas generally place a high value on self-reliance, an attitude which may also account for the differences in types and incidences of disease.

Ellenbogen and Lowe (1968:300-12) report differences in health care "styles" between rural and urban areas. Health care "syles" were measured by the acceptance of eight health practices, such as the reported use of chest x-rays, physical examinations, and preventive dental examinations. "The findings indicated significant differences between the overall patterns of use of the eight practices and place of residence (1968:300)." Age and income were used as control

variables, constituting the dimension "opportunity." The findings revealed an association between residence and use for both the young and old age groups. There was also an association between the low-income group and place of residence, but none was found for those with high income. When an additional analysis controlled for age and income simultaneously, no association was found between young and old adult males with high income, and place of residence. However, there was an association between young males with low income, and place of residence. Elderly adult males with low income showed no rural-urban differences in use of the eight practices.

As reported by van Es and Brown (1974:373-88), the status of rural-urban differences was examined conceptualizing the rural-urban variable into three usages. The first was ecological, relating to place of residence. The second usage was occupation, dicotomized into farm or non-farm. The third usage was sociocultural, and was conceptualized using attitudes and behaviors in rural and urban cultures. They attempted to separate the effects of the first two usages, and to independently assess their impact on the sociocultural usage. The dependent variables included "measures of political attitudes, knowledge and behavior;

volunteer organization participation; and job attachment (1974:375)." The findings indicated that:

> 1) socioeconomic status generally accounted for more of the variation in the dependent variables than either occupation or residence; and 2) when the effect of socioeconomic status is removed, behavioral items were more often related to either occupation or residence than were attitudinal items (1974:375).

The authors suggest that mass culture could resonably be expected to have leveled the differences in attitudes between rural and urban residents. However, behavior could be more influenced due to specific physical constraints, for example, size of place of residence making opportunity for certain behaviors either more or less likely.

The impact of a rural environment on values was studied by England et al. (1979:119-36). They state that although historically it was thought that a rural environment comprised a set of values unique to it, recently it has been suggested that this influence of a rural environment on values has either declined or disappeared. After a review of previous literature, they conclude that "there are still some value differences between rural inhabitants and urbanites which are attributable to the rural environment (1979: 122)." An attempt was made to develop a model which conceptualized rural values as the dependent variable, and the

population and economic aspects of the rural environment as independent variables. Population was measured by community size and population density, and occupation was measured by employment in either agriculture or nonagricultural extraction, such as mining. The results indicate "that a rural environment does result in a greater importance of kindness, physical development, honesty, religion, and self-control (1979:129)." In addition, and contrary to previous studies "intellectualism, social skills, status, and creativity are also more valued as rurality increases (1979:129)."

From the literature it is evident that a concensus of opinion concerning the influence of a rural environment on the development of certain values does not exist at present. However, differences in age, income, and to some extent education, do seem to exist and it is uncertain how greatly these variables may influence values. This was noted by Fischer when he stated that

> urban dwellers differ from rural ones on a variety of characteristics which in turn affect social attitudes, among them, age, stage in the life-cycle, religion, race, region, and social class factors, especially education (1975:422).

Adult Learning Theory

In the education field, theories of adult learning are a relatively new concept. From approximately 1959 to 1964

publications focusing on adult education, as separate from the education of children, became more prevalent. However, even in the preceding 20 year period, there is no concensus about the need for, or utility of, a separate theory of learning for adults. Some researchers maintain that all people learn in the same manner, therefore negating the need for a theory of adult education. Others claim that adults have different needs, a different self-concept, and different past experiences than children. Therefore, there is a need for a separate theory, according to the latter group.

Knowles has been prominent in the promotion of adult learning theory, or andragogy, as compared to pedagogy or the learning theory applied to children. Knowles maintained that there are four crucial assumptions about the characteristics of adult learners that are different than the assumptions about child learners. These are as follows: 1) the adult's self-concept moves from one of dependence to one of self-direction; 2) the adult has a vast reservoir of past experiences that serve as a resource for present learning; 3) the adult's readiness to learn is primarily oriented to the developmental tasks of his social roles; and 4) the adult's time perspective centers on the immediate application of knowledge to current problems (1970:39).

In addition, Knowles posited three assumptions about teaching and learning as applied to adults. The first assumption was that adults can learn, that intellectual power does not decline with age. The second assumption was that learning is an internal process, in which the individual's motivation is related to the extent that he feels the need to learn and perceives that a personal goal can be met through learning. The final assumption was that there are certain conditions that are more conducive to learning than others. These conditions include: 1) that the learner feels a need to learn; 2) that the learning environment is comfortable and free from anxiety and distrust; 3) that the learners feel that the goals of the experience are their goals; 4) that the learners are involved in the planning and implementation of the learning experience; 5) that the learners actively take part in the learning process; 6) that use is made of the previous experiences of the learner and present learning is related to past experience; and 7) that the learners feel that they are making progress toward their goals (1970:49-53).

According to Gibb, there are six principles for adult learning, drawn from several diverse learning theories, and that can be applied to an understanding of the ways in which

adults learn. They are as follows: 1) "learning must be problem centered," and the problem must be the learner's and not the teacher's; 2) "learning must be experience centered;" 3) "the experience must be meaningful to the learner;" 4) "the learner must be free to look at the experience," meaning that the learning climate must be permissive and supportive; 5) "the goals must be set and the search organized by the learner;" and 6) "the learner must have feedback about progress toward goals (Gibb, 1960:58-61)."

Knox also stated many of the preceding principles of adult learning, characteristics of adult learners, and conditions for optimal learning. In addition, he reported on several studies that tested learning abilities of adults. In general, he concluded that ability to learn stayed the same or decreased only slightly with age, especially if intellectual stimulation continued through adulthood. In addition, he concluded that the level of formal education was more strongly associated with learning ability than was age (1977:412-25).

In studies involving short-term memory in adults, Knox reports that short-term memory is relatively stable through most of adulthood, provided that the material to be remembered is in moderate amounts, is meaningful to the learner,

and adequate opportunity for acquisition is provided. Older adults do appear to experience some memory deficits, possibly because they have a greater accumulation of prior knowledge, causing interference with remembering new information (1977:466).

In addition, Knox reports that previous studies have shown that adults require more practice to master new skills, especially verbal materials. This practice is one form of reinforcement. Other forms of reinforcement for adult learning include praise of achievement, learning objectives that are matched to learner needs, and providing opportunities for application of learning activities (1977: 466).

The adult's prior experiences can both positively and negatively influence present learning. Occasionally, it is necessary to unlearn old materials before learning new ones, thus negatively influencing new learning. However, past experience can be helpful in understanding the new material if a connection can be seen between the two (Knox, 1977:466).

As can be seen from these examples from the literature, adult education is much less concerned with the content of programs than with the process of learning. The characteristics and needs of individual learners determine the

content, and guide the process of learning. However, content can vary greatly within and between programs, but process should be based heavily on the foregoing characteristics.

> No matter what specific research is used, teaching of adults involves understanding that adults have different bases of motivation and various past experiences and are generally independent in selecting and participating in learning activities (Tobin, et al., 1979:84).

The wide variation among adult learners is an important concept to bear in mind when implementing or planning an educational program for adults.

Conceptual Framework

The conceptual framwork for the study was based upon the theories of adult learning, network theory, and the concepts related to compliance with a prescribed treatment regimen. From the review of the literature, many concepts of adult learning theory have been identified previously.

The National Association for Public School Adult Education has identified several characteristics of all adult learners. Those which are most pertinent to this study are that adults tend to be more rigid in their thinking and less likely to adopt new ways of doing things. In addition, adults have had more and varied experiences than children, which, as noted previously, can have either positive or

negative effects on the new learning experience. Because of these varied experiences, adults tend to be a more heterogeneous group, due to a wider variety of backgrounds and educational levels (1966). One final principle of learning theory, related to both adults and children, is that anxiety can interfere with learning, especially when it is extreme (Redman, 1968:12).

In applying the above learning concepts to the present study, it would appear that the differences in values evidenced by rural and urban peoples may be significant in a teaching program at a hospital which serves both rural and urban clients. Given the differing environmental and sociocultural influences, rural residents may have not only a lower educational level, but also a very different background of experience than urban residents. Finally, the experience of being hospitalized for a major surgery such as coronary artery bypass grafting is undoubtedly a very stressful and anxiety-producing event. In addition to the anxiety felt pre-operatively, there is the anxiety produced in attempting to confront and change life-styles (Owens, et al., 1978:148). All of these factors operate in the learning situation following the surgery, but may be intensified in a group of rural residents whose value systems may not be

congruent with the health care professional who develops the teaching plan.

A second concept, that of compliance with a treatment regimen, also is a factor in this study. Compliance is not easily predicted, due to the number of variables which may influence compliant behavior. However, the likelihood of non-compliance increases when medications are ordered at frequent intervals, when multiple medications are ordered, or when the medication is ordered at inconvenient times in the person's normal routine (Hussar, 1980:48-53). These difficulties can be applied to other portions of the treatment regimen, as noted by Davis (1967:269):

> Changes in personal habits, such as smoking, drinking, and rest seemed to be the most difficult choice to make. Implicit in the notion of a "difficult regimen" is the drive toward dissonance reduction. To reduce the dissonance, an individual will choose to comply with those regimens which necessitate the least amount of change in his life.

These types of difficult changes are often necessary after coronary artery bypass surgery, if the individual is to avoid the development of further heart disease. As Stockwill and Iada note "health educators are just beginning to realize the problems involved in changing an adult's lifestyle (1976:22)."

Hart and Frantz (1977) also speak about the importance of several variables in the issue of compliance. They report that elderly persons, those in lower socioeconomic groups, and those with little education appear to be the least likely to comply. In addition, they state that "restrictions which cause change in life-patterns and patient judements lead to higher rates of noncompliance (1977:138)." The demographic variables of age, income and education do appear to be significantly different in rural and urban areas.

As Hart and Frantz state "health education is more difficult when it must modify deep-rooted habits of work patterns and life style (1977:137)." Based on assumed differences in values and attitudes in rural and urban people, patient education would then logically be more difficult to achieve with rural patients, not only because of their different values, but also because of the lack of opportunity for reinforcement of the health teaching.

The final concept utilized in this study is drawn from network theory. A study by Croog et.al (1972), investigated the roles of friends, family, and institutions in providing support to urban males following a first myocardial infarction. They concluded that, for the sample in their study,

both friends and family networks were utilized to a much greater degree than community agencies in providing support. Hospital and medical services were utilized for immediate care, but only minimal contact was reported after discharge from the hospital.

A study by Salloway and Dillon (1973) defined family and friend networks as "the normal set of interactions which a person has in his daily affairs (1973:132)." The study compared the effects of family and friend networks on health care utilization. It was concluded that family networks tend to delay the access to medical care, whereas friend networks tend to encourage the seeking of medical care.

From the review of the literature on networks and on family interaction in rural and urban areas, there is no definite concensus regarding the extent and strength of networks in relation to place of residence. Therefore, in the study an attempt was made to measure what differences did exist in the use of these networks operationalized as "lay resource person," and the relationship to rural or urban place of residence.

Summary

Research on patient education has focused primarily on such areas as content of various programs, the effectiveness

of different teaching strategies, and on methods of evaluation. No studies have been done to establish whether different cultural groups have different needs and responses to patient education. Two such cultural groups are rural and urban residents. Based on the literature regarding rural and urban differences, these two groups may be significantly different, indicating the need for different content or methods to enable them to make the changes in life-style that are necessary after coronary artery bypass surgery. According to adult learning theory, individual goals and needs are important considerations when teaching adults. In addition, varying backgrounds and experiences may seriously affect learning in adults. Based upon these concepts, it would seem likely that place of residence could be a significant variable in patient education, if the education were to successfully facilitate changes in life-style.

CHAPTER 3

METHODOLOGY

The purpose of the study was to investigate the influence of rural and urban differences on the patient education directed at changing life-styles after coronary artery bypass surgery. The purpose of the study was to answer the following questions:

1. What are the differences in life-style changes between rural and urban residents following patient education after coronary artery bypass surgery?
2. What are the differences between rural and urban residents in seeking answers to health-related questions from lay resource people?
3. What are the differences between rural and urban residents in the expression of need for further information to aid in home care after coronary artery bypass surgery?

In this chapter, the methodology of the study is presented in the following order: research design, operational definitions of terms, population and method of sampling, procedures for developing and pretesting the instrument for

data collection, overview of the method of data analysis, and chapter summary.

Research Design

The study was a descriptive-survey design. The author believed that some relationships probably did exist between place of residence and life-style changes after surgery, making it necessary to utilize the descriptive-survey design. Some of the variables, especially rural and urban, had been explored through previous research, making an exploratory design inappropriate. A structured questionnaire was chosen, due to the high cost and extensive amount of time required for an interview for collection of the data.

Definition of Terms

Western Montana Region: the area comprised of Mineral, Granite, Ravali, Missoula, Deer Lodge, Silverbow, Clark, Broadwater, Meagher, Sweet Grass, Jefferson, and Flathead counties.

Rural: towns or villages, incorporated or unincorporated, having populations of less than 5,000 and located in the Western Montana region. In addition, those living on farms

or ranches outside of the towns were included in the definition.

Urban: those communities having a population greater than 20,001 and located in the Western Montana region.

Small town: those communities having a population of 5,000 to 20,000 and located in the Western Montana region.

Patient Education: the formalized, structured presentation of information to a person hospitalized at a hospital in Western Montana, for coronary artery bypass surgery. The education of interest was that presented after the surgery, in preparation for discharge and care at home.

Life-style Changes: changes in activity, diet, workplace, and use of medications made as a result of undergoing coronary artery bypass surgery and the attendant education.

Rural Resudent: one whose place of residence, for at least 10 months of each year, is in a rural area as defined.

Urban Resident:	one whose place of residence, for at least 10 months of each year, is in an urban area as defined.
Small town Resident:	one whose place of residence, for at least 10 months of each year, is in a small town as defined.
Lay Resource Person:	person with no formalized medical training who is sought out by members of the community for advice concerning health and illness.

Sample and Setting

It was originally intended to utilize a sample consisting of 100 residents from one urban community in Montana who had undergone coronary artery bypass surgery within the past two years as an urban sample. The rural portion of the sample was also to have consisted of 100 residents from towns of 5,000 population or less in the Western Montana region who had undergone the same surgery within the past two years. However, in order to obtain a sample of this size it would have been necessary to go back much further than two years. Such a procedure would have introduced another intervening variable related to time and forgetting as a function of time, confounding any possible conclusions.

In addition, the patient education program would have become much more variable, also as a result of time.

Taking the above factors into consideration, the investigator decided to use the entire population of persons having had coronary artery bypass surgery at one urban hospital in Montana from January 1, 1979 through the second week in February, 1980. All of the patients had their surgery performed by two cardiac surgeons in a joint practice. The population consisted of 150 persons, 61 from towns of greater than 20,001 population, 26 from towns of 5,000 to 20,000 population, and 63 from towns with less than 5,000 population.

By selecting the above population, it is recognized that any generalizations are limited, and that the study merely defines population parameters. However, this concession had to be made in order to eliminate any further intervening variables.

Data Collection Method

Data were obtained by the use of a mailed, self-administered questionnaire. The participants anonymously completed and returned the questionnaire in a stamped, self-addressed envelope that was provided. They were presumed to

have given their consent to be a participant by completing and returning the questionnaire.

The cover letter (See Appendix) that was attached to the questionnaire simply stated that participation was desired to attempt to study improvements needed in the education program. An attempt was made to write it in language which all the the respondents could understand. The participants were assured that they would remain completely anonymous. Respondents were asked to return the questionnaire within two weeks. The participants were told that the questionnaire took approximately 20 minutes to complete.

The questionnaire (See Appendix) was constructed by the researcher, with the exception of questions 23-26, 28-36, 38-40, and 47, which were modified somewhat from a questionnaire developed by Garrity (1978). Before developing the questions, meetings were held with the various professionals involved in the patient education program. The professionals included the clinical director of the coronary care unit, a physical therapist, a registered dietician, and a pharmacist. In addition, all printed material that is given to patients was reviewed. The information obtained was used in the construction of the questionnaire. Extensive instructions were included with

many of the questions in an attempt to aid the participants in answering them.

After the initial questionnaire was developed, it was reviewed by one of the cardiac surgeons, a patient who had undergone coronary artery bypass, and a registered nurse who is the patient educator who developed the education program. Based upon their input, several major changes were made. The revised questionnaire was again reviewed by the cardiac surgeon, and pilot-tested on two patients who fit the requirements of the sample. No major changes were necessary at that time, and the questionnaire was printed and mailed. The pilot study showed the questionnaire to be easily understood, regardless of educational level, and that it took about 20 mintues to complete.

No follow-up of non-respondents was conducted, because the anonymity of the participants made it difficult unless new questionnaires or reminder postcards were mailed to all subjects. Despite the lack of follow-up, 90 completed questionnaires, or 60%, were returned.

The primary independent variable, rural-urban differences, was operationalized by population of place of residence. Question number 45 requested information regarding

the population of the community in which the respondent resided.

The three dependent variables were operationalized. The first related to life-style changes, and was operationalized by the use of several questions testing knowledge, compliance, and work and activity changes. Questions numbered 7 through 12 tested knowledge, 13 through 19 tested compliance, and 28 through 37 tested work and activity changes. The second dependent variable was health education needs, operationalized by question 22 regarding topics on which more information was desired. The final dependent variable related to use of lay resource persons and was measured by questions 20, 21, and 27 which were concerned with the types of persons providing information about health.

Other variables of interest included anxiety over state of health, satisfaction with teaching and perceived state of health. Satisfaction with hospital teaching was operationalized with six Likert-type scales questioning the respondents level of satisfaction. Questions numbered one through six measured satisfaction. Anxiety and perceived state of health were also operationalized with Likert-type scales. Questions 38, 39, and 40 measured anxiety, and perceived state of health was measured by questions 23 through 26.

Demographic data was solicited by questions 41 through 44, 46 and 47.

The questionnaire has content validity, due to the pretests that were administered. After the pilot study the subjects were interviewed for any possible suggestions. In addition, there was considerable input from several experts closely associated with the teaching in the hospital.

Data Analysis

The analysis of the data was primarily by means of descriptive statistics and non-parametric measures of association such as Chi square and Cramer's V. In addition, percentages of response on several items were compared between the groups. Data are presented in tables, and narrative form in the following chapter.

Summary

The purpose of the study was to determine the influence of place of residence on patient education received and life-style changes made after coronary artery bypass surgery. Three research questions were developed.

A questionnaire for collection of data was developed by the researcher, with some questions revised from an existing questionnaire. A pilot test was performed.

The questionnaire was mailed to 150 former coronary artery bypass surgery patients. The subjects had their surgery no more than one and one-half years ago, and the entire population which fit the criteria was included. The subjects remained anonymous, and agreed to participate by returning the questionnaire. No attempt was made to recontact those who did not respond.

CHAPTER 4

DATA ANALYSIS

The purpose of the study was to determine whether there were differences between rural and urban people in types of life-style change made after coronary artery bypass surgery. In addition, the study attempted to determine what differences existed between rural and urban people in the use of lay resource persons, and in the expression of needs for further information related to their home care after coronary artery bypass surgery. The study attempted to answer the following three questions:

1. What are the differences in life-style changes following patient education after coronary artery bypass surgery between a group of rural residents and a group of urbanites?
2. What are the differences between rural and urban residents in seeking answers to health-related questions from lay resource people?
3. What are the differences between rural and urban residents in the expression of need for further information to aid in home care after coronary artery bypass surgery?

The analysis of the data in this chapter is presented in the following order:

1. The demographic data are presented for each group.
2. The data related to changes in life-style are presented for each group.
3. The data relating to use of lay resource persons for health information are presented for both groups.
4. The data pertaining to the needs for further information are presented for both groups.
5. Data are summarized for the rural-urban variable.
6. Date related to the three research questions are presented, conceptualizing the independent variable in terms of both population and distance from the treatment center.
7. The data for the population/distance variable are summarized.
8. Other variables of interest are presented.
9. The chapter is summarized.

Demographic Data

In this section, some of the characteristics of the entire group are explained first, then demographic data are presented for each group individually. Age ranged from 40

to 73, with the mean for the whole group being 58.7 years, with a standard deviation of 8.6 years. There were 90 respondents, 72 male and 18 female. The length of time since the surgery ranged from 2 to 18 months, with the mean being 8.5 months. The standard deviation was 4.1 months. Education ranged from 21 respondents with an eighth grade education or less, to 7 with more than four years of college completed. Fifteen respondents had had some high school, and 21 had completed high school. Twenty-three had had some college.

Fourteen lived on farms or ranches, 9 in towns of less that 500, 15 in towns from 500-5,000 population, 19 in towns from 5,001-20,000 population, and 33 in cities from 20,001-40,000 population. Seventeen respondents live in the community where the surgery was performed. Mileage away from that community for the remaining 73 respondents ranged from three miles to 350 miles, with the mean being 99.1 miles away, and the standard deviation being 62.0 miles.

Income was reported as remaining the same after surgery for 56.6 percent of the respondents. It reportedly dropped a little for 20.5 percent, and dropped a lot for 10.8 percent. Conversely, 10.8 percent stated their income was up a little, and 1.2 percent said it was up a lot.

When the original research questions were developed, the author intended to study only the discrete categories of rural and urban residents. However, after the data were collected, a third group fitting neither the rural nor the urban group, was found. This group was included in the data analysis, and termed "small town" residents, because the populations of the communities was between 5,000-20,000. In summary, according to the definitions, there were 38 rural respondents, 19 small town and 33 urban respondents.

When the demographic data for the three groups are compared, they are essentially similar on most of the items. There were 27 males and 11 females in the rural group, 15 males and 4 females in the small town group, and 30 males and 3 females in the urban group.

The mean age for the rural respondents was 58.6 years, with a standard deviation of 9.3 years. For the small town group the mean age was 54.4 years, with a standard deviation of 9.1 years. The mean age for the urbanites was 58.3, and the standard deviation was 7.2 years.

The mean length of time since surgery was 8.6 months for the rural group, and the standard deviation was 4.3 months. The small town group showed a mean of 9.4 months, with a standard deviation of 3.9 months. For the urbanites

the mean was 8.0 months and the standard deviation was 3.7 months.

Table 1 presents the percentages of response to the item regarding amount of formal education for the three groups. There were some differences between the three groups, with the rural residents generally having a lower level of education than the other two groups.

Table 1. Percentages of Educational Level for Rural, Small Town and Urban Respondents

Educational Level	Respondent Groups		
	Rural N=36*	Small Town N=19	Urban N=33
8th grade or less	33.3%	31.6%	9.1%
some high school	22.2	15.8	12.1
completed high school	25.0	26.3	21.2
some college	16.7	15.8	42.4
completed college	0.0	5.3	0.0
more than 4 years college	2.8	5.3	15.2

*Not all respondents in the group answered the question. Percentages are only for those who answered.

In the rural group, the mean number of miles away from the community where surgery was performed was 85.6 miles. For the small town group the mean was 109.4 miles. The mean for the urban group was 120.5 miles. Seventeen respondents

in the urban group lived in the community where the surgery was performed, and were therefore not included in the mileage away from it.

Table 2 presents the information regarding income changes for the three goups. Income increased for the urban group to a greater extent than for the other two groups. However, the majority of each group reported no change in their income.

Table 2. Percentages of Income Change for Rural, Small Town and Urban Respondents.

Income Change Direction	Respondent Group		
	Rural N=24*	Small Town N=17*	Urban N=32*
dropped a lot	11.8%	17.6%	6.3%
dropped a little	19.4	17.6	12.5
stayed the same	50.0	52.9	65.6
up a little	8.8	11.8	12.5
up a lot	0.0	0.0	3.1

*Not all respondents answered the question. Missing cases are not included in percentages.

Life-style Change

The intent of the life-style change section of the questionnaire was to determine if there were differences in life-style change in a rural group, when compared with a

group of urbanites and a group of small town residents. A Chi square test was utilized to determine if there were statistically significant differences. The Chi square was considered to be significant if it reached the .05 level of significance. Indicators of life-style change were changes in activity or work, and extent of compliance with instructions on diet, exercise and medications. Knowledge levels were also assessed, with the assumption that lack of knowledge might be indicative of difficulty in effecting life-style change.

Only two of the life-style change items showed a statistically significant difference between the three groups. The two items were 1) plans to return to work in the future, and 2) whether this was the same type of work done as before the surgery or not. Tables 3 and 4 present the percentages of responses, and the Chi square and Cramer's V values for these two items. As can be seen, more of the rural residents plan to return to work in the future. In addition, more of the rural group have changed jobs since having their surgery.

Although the differences were not significant, some of the other items related to work change were of interest. Only 34.2 percent of the rural group presently hold a job

Table 3. Chi Square and Cramer's V Values for Rural, Small Town and Urban Residents Regarding Plans to Return to Work in the Future

Questionnaire Item		Respondent Group Rural N=22*	Small Town N=8*	Urban N=14*
Planning to return to work in the future?				
	yes	27.3%	0%	0%
	no	72.7	100	100

Chi square = 9.88
df = 4
$p < .05$
Cramer's V value = 0.474

*Not all respondents answered the question. Percentages are only for those who answered.

Table 4. Chi Square and Cramer's V Values for Rural, Small Town and Urban residents Regarding Type of Work Done Now as Compared to Before Surgery

Questionnaire Item		Respondent Group Rural N=17*	Small Town N=11*	Urban N=19*
Doing same type of work now as before surgery?				
	yes	82.4%	100%	94.7%
	no	17.7	0	5.3

Chi square = 12.82
df = 4
$p < .01$
Cramer's V values = 0.522

*Not all respondents answered the question. Percentages are only for those who answered.

for pay, compared to 52.6 percent of the small town group and 54.4 percent of the urban group. When questioned about the type of occupation presently being performed, 43.8 percent of the rural group were either laborers, or engaged in farm or ranch work. In the urban group 40.8 percent of the respondents were engaged in white collar work such as teaching or business. The small town group responded that 27.3 percent were engaged in labor and 18.2 percent were professionals. When asked if they had changed jobs as a result of their heart surgery, the percentage of affirmative responses was essentially the same for all three groups.

Various types of activity change were taken as indicators of life-style change also. Table 5 presents the percentages of activity change for the three groups for several activities. Not all respondents answered every question. Percentages are calculated on the responses only, and non-responses are not included. From the table, some trends in activity change appear. All three groups are spending a great deal of time on sedentary activities. The urban group is spending proportionately more time sleeping than the other two groups, and the rural group is spending more time working on hobbies or for pay than the other two groups. Both the small town and urban groups are spending more time now sitting around or watching TV than the rural group.

Table 5. Percentage of Activity Change Since Surgery for Rural, Small Town and Urban Residents

Activity	Direction of Change	Respondent Group		
		Rural	Small Town	Urban
Sleep time	less	16%	26%	12%
	same	55	47	46
	more	29	26	42
		N=38	N=19	N=33
Work time	less	31	20	25
	same	45	67	63
	more	10	7	4
	retired	14	7	8
		N=29*	N=15*	N=24*
Watching TV	less	19	11	18
	same	68	63	55
	more	14	26	27
		N=37*	N=19	N=33
Sitting around	less	31	28	23
	same	51	50	53
	more	17	22	23
		N=35*	N=18*	N=30*
Reading books	less	11	6	7
	same	66	72	67
	more	23	22	27
		N=35*	N=18*	N=30*
Working hobbies	less	6	13	31
	same	59	73	48
	more	34	13	21
		N=32*	N=15*	N=29*
Attend meetings	less	16	0	19
	same	75	87	68
	more	9	13	13
		N=32*	N=15*	N=31*
Volunteer work	less	24	14	20
	same	68	71	76
	more	8	14	4
		N=25*	N=14*	N=25*
Visit friends	less	6	11	7
	same	72	72	72
	more	22	17	21
		N=32*	N=18*	N=29*

*Not all respondents answered the question. Percentages are only for those who answered.

One final indicator of life-style change was the extent to which the respondents felt they were able to follow the instructions on diet, exercise and medications. The differences were not found to be statistically significant. However, when asked about the extent to which exercise instructions were followed, 57.6 percent of the urbanites and 50.0 percent of the small town residents stated they complied all the time, compared to 35.1 percent of the rural residents. The lowered compliance seems to indicate that rural residents are less likely to incorporate exercise changes into their life-style. As reported by vanEs and Brown (1974), behavioral differences between rural and urban residents may be largely influenced by specific physical constraints. Their finding would seem to be supported by the fact that 63.1 percent of the rural residents gave adverse weather conditions as the reason for problems in following the instructions.

When questioned about problems that caused difficulty in following the instructions, no statistically significant differences were found. However, some of the responses indicate a possible trend, such as the higher percentage of rural residents who stated they had no satisfactory place to exercise. In addition, only the rural group responded

affirmatively to the response "job that requires heavy physical activity." The requirement for heavy physical activity is consistent with a larger number of rural residents engaged in farming or manual labor. Table 6 presents the percentages of affirmative responses to the separate parts of the item. In addition, 68.4 percent of the rural group, 68.4 percent of the small town group, and 75.8 percent of the urbanites stated that they had no problems when returning home.

Table 6. Percentages of Problems at Home Preventing Compliance with Instructions for Rural, Small Town and Urban Residents*

Potential Problems	Respondent Group		
	Rural N=38	Small Town N=19	Urban N=33
Stairs up to house	0%	0%	0%
Stairs up to bedroom	3	0	3
Care for sick relative	5	0	0
Job with heavy activity	5	0	0
No one to care for me	7	16	3
Unable to understand instruction	0	0	0
No place to exercise	18	16	9
Low income	5	16	0
Medicine times inconvenient	0	0	6

*Percentages do not total 100%, since respondents could select more than one response.

Finally, six items were related to factual knowledge that was provided during teaching while hospitalized. There were no statistically significant differences between the groups on these items. Percentages of correct responses were essentially the same for all six items for all three groups.

Summary

There were no major differences in life-style change bewteen the three groups. Only two of the items measuring life-style change were statistically significantly different between the three groups. The majority of the three groups that were employed were performing the same type of work as before their surgery. It appears that having coronary artery bypass surgery is not an indicator of the need to change type of employment. In addition, proportionately more of the rural group plan to return to work in the future despite the fact that the mean age was essentially the same for the three groups.

Although none of the other items indicated a statistically significant difference, some were of interest due to the differing percentages of response. The differences in percentages seem to indicate some trends toward differences

between the three groups. Fewer rural people were presently employed and those that were held jobs in labor or farm and ranch work to a great extent.

All three groups were spending considerable time in sedentary activities, especially the urban group. The extent to which the three groups complied with instructions on diet, exercise and medications showed the rural group complying to a lesser extent on exercises than the other two groups. The lower compliance may be due to the fact that satisfactory places to exercise were less available in rural areas.

The items that measured problems at home which affected compliance showed the rural groups having two specific problems that relate to the rural environment. They had no satisfactory place to exercise, and they also had jobs that required heavy physical activity. Since many were farmers or laborers, the problem would be consistent with the type of employment.

There were no statistically significant differences on six items measuring knowledge, and percentages of correct responses were essentially the same for all three groups. Apparently place of residence does not influence ability to learn, or amount of knowledge gained.

Lay Resource Use

Two items on the questionnaire dealt with the various means by which the respondents may have gone about seeking answers to questions that arose after discharge. Included in the possible responses were three that requested information on the use of lay resource persons. Table 7 summarizes the data dealing with several types of resource persons.

From the table it can be seen that the rural group relied heavily on their family physician to obtain answers. The urban group relied on phoning their family doctor, or their cardiologist in approximately equal amounts. The small town group requested information from their family doctor or their cardiologist at their regular appointments. Also, a large proportion of the small town group asked questions of friends who had previously had heart surgery. The urban group, who would logically seem to have more opportunity to question former pateints, relied on former patients to a much lesser extent. Also of interest was the fact that none of the three groups contacted the nurses at the hospital to seek further information from them. The only response that was statistically significant was the use of the county health nurse by the rural group. Also, more of the small town group attempted to figure out the

answers to problems themselves. As reported by Kane (1977), there is a greater degree of self-sufficiency among rural residents, a finding which was not supported by this data.

Table 7. Percentages of Means of Obtaining Answers to Additional Questions for Rural, Small Town and Urban Respondents*

Method of Obtaining Answers	Respondent Group		
	Rural N=38	Small Town N=19	Urban N=33
Phone family doctor	47%	16%	36%
Phone surgeon	5	0	9
Appointment, family doctor	37	26	30
Appointment, surgeon	13	11	15
Phone cardiologist	16	21	36
Appointment, cardiologist	34	63	30
Friend who knows health	3	5	3
Friend who had surgery	8	26	12
Call nurses at hospital	0	0	0
Call county health nurse	8**	0	0
Figure out by myself	3	11	9

**Chi square = 12.76
df = 4
$p < .01$
Cramer's V value = 0.38

*Percentages do not total 100%, since respondents could select more than one response.

When asked specifically if they received health information from friends and relatives, 21.1 percent of the rural

group, 47.4 percent of the small town group, and 30.3 percent of the urban group stated that they had. Not all respondents answered the question regarding types of information provided by friends and relatives. Of the eight rural respondents, half received directly health-related information. Nine small town respondents answered the question, and 44.4 percent received health-related information. Nine urban residents also answered the question, and 88.9 percent of those received health-related information. Other responses included such things as "not to worry," and "they say I look much better," which were not considered to be directly health-related. None of these differences were statistically significant.

Summary

There were no statistically significant differences between the three groups in utilization of lay resource people. However, for lay resource and other types of resource persons there were some trends that appear. Rural residents made greater use of their family physician than the other two groups. Greater reliance on the family physician is probably a function of opportunity, since the local physician is the resource person most readily available to

them. Conversely, urban and small town residents used either family doctors or cardiologists to obtain answers, because they were both available.

The small town group had a fairly large percentage who utilized friends who had previously had heart surgery, compared to the other two groups. This is an unexpected finding, since it would seem likely that the urban group, with a larger population, would have more former patients available to question. Also, the small town group had more affirmative responses when asked if they received health information from friends and relatives, supporting the previous finding.

Further Information Needed

The third research question in the study dealt with needs for further information, and differences in the types each group perceived they needed. Table 8 shows the percentages of each group's responses to the various parts of this item. There were no statistically significant differences on any of the items on the Chi square test.

It is of interest that a very large percentage of the small town group stated they wished more information on risk factors for heart disease. Information on risk factors

Table 8. Percentages* of Respondents Regarding Types of Further Information Needed by Rural, Small Town and Urban Residents.

Information Needed	Respondent Group		
	Rural N=34**	Small Town N=18**	Urban N=21**
Angina pains returning	35.3%	27.8%	18.8%
Low cholesterol diet	17.6	33.3	28.1
Returning to work	11.8	0.0	9.4
Resuming sexual relations	2.9	11.1	0.0
Daily exercise and activity	11.8	38.9	21.9
Taking medications correctly	2.9	5.6	0.0
Risk factors for heart disease	38.2	61.1	25.0
What to do if pulse or blood pressure change	23.5	33.3	12.5
What to do for problems with incision	8.8	11.1	12.5
What to do for bowel or bladder problems	11.8	11.1	3.1
None of the above; wish no more information	23.5	16.7	40.6

*Percentages do not total 100% since respondents could select more than one response.

**Not all respondents answered the question. Missing data are not included in percentages.

was also the most frequently expressed response for the rural group, and the second most frequently expressed need for the urban group. However, the percentages of the latter two groups were much smaller than for the small town group.

The rural group requested further information on diet and exercise less frequently than did the other two groups, possible indicating that they believed the information already provided was adequate, or that they were not interested in learning more about ways to change their life-style.

Additional types of further information desired included such things as how long the bypass would work well, the extent to which the heart resumed its normal function, and the effect of tobacco on the heart and lungs. Each of these responses was given by one respondent. There were no statistically significant differences on these responses.

Summary

Although there were no statistically significant differences between the three groups on the types of further information needed, some interesting differences in percentages of responses do appear. To some extent the three groups were interested in different types of additional information. The three most frequent responses for the rural group, in order of their importance were 1) risk factors for heart disease, 2) angina pains returning, and 3) abberant vital signs. For the small town group the three topics on which further information was needed were 1) risk factors for

heart disease, 2) daily exercise and activity, and 3) low cholesterol diet. The three topics most frequently requested by the urban group was 1) low cholesterol diet, 2) risk factors for heart disease and 3) daily exercise and activity. It appears that the urban and small town groups were more interested in information of a preventive nature, while the rural group was more concerned with potential problems.

Summary of Rural-Urban Variable

There were no major areas of statistically significant difference between the three groups for any one of the three research questions. However, percentages of response on several of the questionnaire items did seem to indicate a trend, suggestive of differences between the three groups. Fewer rural respondents were presently working than in the other two groups, although the mean ages for the rural and urban groups were essentially the same. In addition, more rural residents plan to return to work in the future. A large percentage of the rural group was employed in farming or as laborers, whereas nearly half of the urban group was employed in white collar professions.

All three groups engaged in sedentary activities to a large extent, often much more frequently than before the surgery. However, the rural group was spending more time now on hobbies and work than the other two groups. This may be explained by the rural value that is placed on work, as reported by Glenn and Hill (1977).

A much smaller percentage of the rural residents complied with instructions regarding exercise than did the other two groups. Lack of an adequate place to exercise, and adverse weather conditions were frequent reasons given for non-compliance. These environmental constraints would logically be a result of place of residence.

Use of lay resource persons did not show statistically significant differences between the three groups. Twice as many residents of small towns sought answers from former heart surgery patients as did the urban residents. Opportunity to have contact with former patients would logically seem to be greater in the urban area, as reported in the literature review. All three groups relied heavily on health care professionals to provide answers to additional questions.

The three groups showed some differences in types of further information needed, although none of the differences

were statistically significant. In addition, the priorities of the three groups' needs were different, although not statistically. This may have implications for teaching these groups while they are hospitalized.

The three groups did show differences in life-style change, in use of lay resource persons, and in types of further information needed. Although none of the differences were statistically significant in major areas, some trends do appear.

Introduction: Population/Distance

From the literature review a second means of conceptualizing "rural" and "urban" was taken as population density and distance from necessary services. Due to the fact that rural and urban, when conceptualized only by population, showed only minor areas of statistical significance on the research questions, the investigator decided to explore the differences using population and distance to define rural and urban. When this was done, four separate and fairly homogeneous groups emerged.

The first group, labelled "urban near," had a population of 20,001-40,000, and lived in the community where surgery was performed. Seventeen respondents fit this

group. A second group, called "rural near," lived on farms or in towns of less than 500 up to 5,000 population. This group was 3 to 90 miles away from the treatment center. Twenty-seven respondents fit this group. The third group, labelled "urban far," lived 100-126 miles from the treatment center, in towns of 5,001-20,000 and 20,001-40,000. There were 33 respondents in this group. The final group was called "rural far," and they lived 130-190 miles from the treatment center on farms or in towns from less than 500 up to 5,000 population. There were 12 respondents in this group.

Demographic data will be presented for the four groups, as defined. Then some of the percentages of responses for the four groups on the questionnaire items will be presented. Tests of significance were not done, and data will only be presented in percentages.

Demographic Data: Population/Distance

The four groups were faily homogeneous within themselves. Therefore, only that demographic data which represents differences between the four groups will be presented. The mean ages for the four groups were essentially the same. The means ranged from 57 years up to 60 years, with the

rural far group being the youngest, and the urban far group the oldest.

Although the majority of each group was male, the differences in percentages of females in the groups varies a fair amount. Table 9 presents the data on sex for each of the four groups. There are more females in the rural near and urban far groups.

Table 9. Percentages of Males and Females in the Urban and Rural Near and Urban and Rural Far Respondent Groups

Sex	Respondent Group			
	Urban Near N=17	Rural Near N=27	Urban Far N=33	Rural Far N=12
Male	94.1%	66.7%	78.8%	91.7%
Female	5.9	33.3	21.2	8.3

The mean length of time since surgery was essentially the same for the urban and rural near groups, and longer for the urban and rural far groups. However, the range was from 7.9 months to 10.2 months, so length of time since surgery was essentially the same for all four groups.

Level of education was lowest for the rural far group, then for the rural near group. The urban far group was the second lowest educationally, and the urban near group had the highest educational level.

The urban near group had less change in income than the other three groups, and the urban far group had the most change. The rural near and rural far groups both had some respondents who said their income was up a little, which is interesting since many were farmers or lived in very small towns.

Life-style Change: Population/Distance

The above four groups were compared on the same items measuring life-style change as in the previous section. These included work and activity change, extent of compliance with instructions on diet, exercise and medications, and factual knowledge related to information taught while hospitalized.

When questioned about whether or not they currently hold a job for pay, the percentages responding affirmatively differed widely between the four groups. Table 10 presents those percentages, as well as the mean ages and mean lengths of time since the surgery. The rural near group had the second youngest mean age, the shortest time since surgery and the smallest percentage presently working. By contrast, the urban near group is the third oldest, and a large percentage are presently employed, although their mean length

of time since surgery is not significantly different from the rural near group. It is not clear why more of the rural near group has not returned to work, unless the type of work is prohibitive.

Table 10. Percentages of Urban and Rural Near and Urban and Rural Far Respondents Presently Working, Compared to Mean Age and Length of Time Since Surgery for Each Group

	Respondent Group			
Employment Status	Urban Near N=17	Rural Near N=27	Urban Far N=33	Rural Far N=12
Working at present?				
yes	64.7%	22.2%	45.5%	66.7%
no	35.3	77.8	54.6	33.3
Mean age	58.9 years	57.9 years	60.3 years	57.0 years
Mean length of time since surgery in months	7.9	7.2	9.0	10.2

Those not working at present were asked if they planned to return to work in the future. In the rural near group 22.2 percent stated "yes," as did 33.3 percent of the rural far group. This is in contrast to the urban near group, where none stated "yes" and the urban far group where only 5.6 percent answered affirmatively.

When those who are presently working were asked if this was the same type of work as was done before surgery, the

urban and rural near and the urban far groups' answers were essentially similar. However, less of the rural far group answered affirmatively than the other three groups. In addition, more of the rural far group stated they had to change jobs as a result of their surgery.

Table 11 presents the data on activity change for the four groups. All four groups spend considerable time engaged in sedentary activity. However, there are some interesting differences in the percentages. The urban near group is spending much more time now sleeping than the other three groups, although the rural far group percentage is the closest to the urban near. More of the rural far group is spending more time working now than the other three groups. In addition, they are spending less time now watching TV than the others. Approximately the same percentage of each group is spending more time now sitting around. It is of interest that the rural far group is spending much more time now reading books than the other three groups. The urban near percentage is much less than the other groups for those spending more time now on hobbies. Finally, the urban near and the rural far groups are spending more time now attending meetings than the other two groups.

Table 11. Percentages of Activity Change Since Surgery for Urban and Rural Near and Urban and Rural Far Respondents*

Activity	Direction of Change	Respondent Group: Urban Near	Rural Near	Urban Far	Rural Far
Sleep time	less	12%	19%	18%	17%
	same	29	56	58	42
	more	59	26	24	42
		N=17	N=27	N=33	N=12
Work time	less	17	30	24	40
	same	83	50	56	40
	more	0	5	4	20
	retired	0	15	16	0
		N=12	N=20	N=25	N=10
Watching TV	less	24	22	12	0
	same	47	59	64	91
	more	29	19	24	9
		N=17	N=27	N=33	N=11
Sitting around	less	27	31	27	18
	same	47	46	57	64
	more	27	23	23	18
		N=15	N=26	N=30	N=11
Reading books	less	14	8	9	0
	same	64	80	63	55
	more	21	12	28	46
		N=14	N=25	N=32	N=11
Working hobbies	less	33	10	18	9
	same	60	67	50	55
	more	7	24	32	36
		N=15	N=21	N=28	N=11
Attend meetings	less	13	25	10	8
	same	67	70	83	75
	more	20	5	7	17
		N=15	N=20	N=30	N=12
Volunteer work	less	15	25	17	27
	same	77	69	74	64
	more	8	6	9	9
		N=13	N=16	N=23	N=11
Visit friends	less	7	4	10	9
	same	64	75	76	64
	more	29	21	14	28
		N=14	N=24	N=29	N=11

*Not all respondents answered every question. Missing data are not included in percentages.

The three items that measured extent of compliance with the instructions on diet, exercise and drugs also show some interesting percentage differences between the four groups. On the item asking the extent to which diet instructions were followed, the rural near group had the highest percentage following the diet all the time. The percentages for the other three groups are essentially the same, except that more of the rural far group marked "not very often."

For the item measuring the extent to which exercise instructions were followed, the rural far group had a much lower percentage that marked "all the time" than did the other three groups, and a much higher percentage that marked "sometimes." However, none of the rural far group marked "not very often" or "never," compared to just over 10 percent of the other three groups who marked it. It is apparent that the rural far group had more difficulty in following through on exercise instructions than the remaining groups. Fifty six percent of the rural far group stated that adverse weather was the reason they were unable to follow the directions all the time.

All four groups responded essentially the same on the item measuring compliance with instructions about medicines. The rural far group had a somewhat lower percentage than the

other three, but not a great deal lower. Approximately six percent of the urban near group said they never complied, because they had no medications ordered. It appears that it is less difficult to incorporate medications into one's life-style than it is to change exercise or dietary habits.

One item requested information about problems experienced that caused difficulty in following instructions at home. Respondents could check as many responses as they felt applied to them. The rural near and far groups stated that jobs requiring heavy physical activity caused problems for them, while no one in the urban groups gave this response. All groups except the urban near group stated that having no place to exercise caused a problem. In addition, the rural near and far groups stated they had to care for a sick relative when they returned home, and neither of the urban groups gave this response. Sickness in the rural groups may be supported by Kane (1977), who reported more chronic illness in rural areas. Problems affecting compliance were not great concerns for any of the groups, except the need concerning a satisfactory place to exercise. However, some minor differences did exist between the groups.

Finally, there were six items measuring knowledge of information given in the hospital. Three of the items dealt

with different medications, and correct answers appeared to be largely dependent upon whether the respondent had been placed on the drug. However, the other three items showed the rural far group to have much smaller percentages of correct responses than the other three groups. In addition, larger percentages of the rural far group stated they had never been taught the information.

Summary

Many of the life-style change items show several percentage points difference between the four groups. However, since no tests of significance were performed, no claims of statistically significant difference can be made. Despite this, there do seem to be some trends among the groups.

The majority of the rural far group was working or planned to return to work in the future. However, several of them have had to change jobs as a result of their surgery. They had complied with home care instructions to a lesser extent, and their level of knowledge was lower than the other three groups. Having a job that requires heavy physical activity and no satisfactory place to exercise were two frequent problems that hindered compliance with the instructions for home care. A large number of them were sleeping

more, reading more, working more for pay or on hobbies, and visiting friends more now than before their heart surgery. These changes in activity would indicate some significant changes in their life-style, especially toward more activity.

By contrast, a large percentage of the urban near group was working, but those who were not do not plan to return to work in the future, and very few of them have had to change jobs as a result of their heart surgery. Approximately half of them have followed their instructions all the time, and there were very few problems that hindered their compliance. Their knowledge levels were fairly high, with the exception of one item concerned with the pulse rate at which one should stop exercising. However, none of the four groups had high percentages of correct response on that item. The urban near group was also spending more time sleeping, visiting friends, sitting around and watching TV, and less time working on hobbies and for pay. The activity changes in this group seem to be more in the direction of sedentary activity.

Lay Resource Use: Population/Distance

On the item asking whether the respondents received information concerning health matters from friends and

relatives, the percentages were essentially the same for all four groups. A slightly larger percent of both urban groups stated they did receive such information. The larger percentage may be due to greater opportunity for contact with more friends in an urban area.

On the items requesting information about how the respondents obtained answers to additional questions they had, the respondents could mark as many responses as applied to them. Table 12 presents the responses by the four groups to these parts of the question. As can be seen, none of the groups had large percentages who utilized friends to obtain their answers, but there was more use made of former patients by all but the rural far group. The rural far group may not have had as much access to former patients as the other three. Apparently lay persons are not recognized as being resource persons to any great extent.

The urban near group most frequently phoned their cardiologist, or family physician, or heart surgeon with further questions. These resources were readily available, and did not require a long distance call, whereas phone calls to the cardiologist and surgeon were less frequent in the rural and urban far groups, where the call would have been long distance. However, these latter two groups did

phone or go to see their family physician, who was undoubtedly located much nearer to them.

Table 12. Percentages* of Means of Obtaining Answers to Additional Questions for Urban and Rural Near and Urban and Rural Far Respondents

Method of Obtaining Answers	Respondent Group			
	Urban Near N=17	Rural Near N=27	Urban Far N=33	Rural Far N=12
Phone family doctor	29%	37%	33%	58%
Phone surgeon	12	11	0	0
Appointment, family doctor	18	33	36	42
Appointment, surgeon	18	22	9	0
Phone cardiologist	53	19	18	17
Appointment, cardiologist	24	48	49	8
Friend who knows health	0	4	6	0
Friend who had surgery	18	19	12	0
Call nurses at hospital	0	0	0	0
Call county health nurse	0	11	0	0
Figure out by myself	0	4	12	8

*Percentages do not total 100%, since respondents could select more than one response.

Very few respondents in any of the groups tried to figure the problem out themselves, but the largest percentages were in the urban and rural far groups. The rural far group's responses are similar to the reportedly high degree

of self-reliance among rural people. It appears that the further one is from services, the more likely he relies upon himself. Only the rural near group utilized the county health nurse as a resource, and none of the groups utilized the nurses at the hospital where surgery was performed.

Summary

Lay resource use was very low for all four groups, with the rural far group making the least use of lay resource persons. The most frequently used resource persons were health professionals that were either available in one's own community, or readily available by phone. Nurses were very seldom recognized as a potential resource by any of the groups.

Further Information Needed: Population/Distance

One question requested information about various types of additional information desired. If the teaching had not been sufficient in certain areas, or if different problems concerned the different groups, they might require different types of information. The respondents could mark as many of the responses as were applicable for them.

Table 13 presents the percentages of responses marked by the four groups for each item of the question. Both of the urban groups wished for more information on diet and exercise, than did the rural groups. The rural groups were more interested in information about anginal pains returning. All except the urban near group were interested in

Table 13. Percentages* of Respondents Regarding Types of Further Information Needed by Urban and Rural Near and Urban and Rural Far Respondents

Type of Information Needed	Respondent Group Urban Near	Rural Near	Urban Far	Rural Far
Angina pains returning	19%	39%	22%	33%
Low cholesterol diet	31	17	31	17
Returning to work	13	13	3	8
Resuming sexual relations	0	0	6	8
Daily exercise	19	13	28	17
Taking medicines correctly	0	0	3	8
Risk factors for heart disease	19	39	50	25
Abberant vital signs	25	26	19	17
Incisional problems	6	9	16	8
Bowel, bladder problems	0	4	13	17

*Percentages do not total 100% since respondents could select more than one response.

**Not all respondents answered the question. Missing data are not included in percentages.

additional information about heart disease risk factors. Approximately the same percentage of each group wished more information on abberant vital signs.

Summary

The four groups did appear to be interested to some extent in different types of additional information. It appears that generally the urban groups were interested in information of a preventive nature, whereas the rural groups were concerned more with potential problems. This may be due to the availability of medical services for the groups, rather than lack of adequate teaching while the groups were hospitalized.

Summary of Population/Distance

Some trends of difference were identified between the four groups. All four of the groups have adopted a more sedentary life-style. However, the rural far group seems to engage in work activities more than the other groups. They have also incorporated diet and exercise instructions into their life-style to a lesser extent than the other three groups. Problems they have experienced are also different, such as lack of a satisfactory place to exercise,

and jobs that require hard physical activity. They were the only group that had to change their jobs as a result of the surgery to any great extent.

The research question dealing with differences in lay resource utilization showed little difference between the groups. Lay resource persons were seldom utilized by any of the groups, but were utilized slightly more by the urban groups than by the rural groups. The increased use by the urban groups may be due to the fact that an urban area, with a larger population, provides more opportunity to interact with people who may have the information needed.

The final research question dealt with differences in further information needed. In general, the urban groups were more concerned with additional information about diet and exercise, which may indicate a desire to change one's life-style and avoid further heart disease development. However, the urban near group had the lowest percentage of interest in more information about risk factors. With the exception of interest in risk factors, the rural groups seemed to be more interested in potential problems, possibly due to the relative lack of availability of medical services for rural areas.

Other Variables of Interest

Satisfaction with the teaching, anxiety about one's health, and state of health (perceived severity of disease) were also measured. These were not directly related to the three research questions, but were included as possible factors which might be of interest. Each variable had a series of Likert-type items ranging from zero at the negative end to nine at the positive end. When the four groups were compared on the six measures of satisfaction, scores of zero through three were categorized as dissatisfied, and scores of six through nine were categorized as satisfied.

Table 14 summarized the data on satisfaction for the four groups. As can be seen, generally the two near groups expressed more dissatisfaction than the two far groups. The rural far group also had a higher percentage of dissatisfaction with the physical therapists' instructions, and was the group that complied the least often with the instructions on exercise. Percentages of neutral responses are not presented.

The items measuring anxiety were dichotomized in a manner similar to the satisfaction scales, with the grouped

Table 14. Percentages of Satisfaction and Dissatisfaction with Teaching by Various Health Professionals for Urban and Rural Near and Urban and Rural Far Groups

	Respondent Group			
Abbreviated Item	Urban Near N=17	Rural Near N=27	Urban Far N=33	Rural Far N=12
The nurses told me a great deal . . .				
satisfied	65%	70%	91%	75%
dissatisfied	18	19	6	8
The doctors told me a great deal . . .				
satisfied	100	89	91	92
dissatisfied	0	7	0	0
The dieticians told me a great deal . . .				
satisfied	59	74	85	64
dissatisfied	18	15	9	18
The physical therapists told me a great deal . . .				
satisfied	59	67	76	50
dissatisfied	29	9	25	
The nurses made sure . . .				
satisfied	77	74	91	83
dissatisfied	6	19	9	0
It was easy to understand the nurses . . .				
satisfied	88	85	91	83
dissatisfied	6	15	6	17

responses being "very worried" and "not worried" about one's health. The rural far group experienced more worry about their health at present that did the other three groups.

Distance from a treatment center provides a logical explanation. However, both the rural groups expressed a lower degree of worry before their surgery than did the two urban groups. Finally, the percentages of those worried about their health at the time of discharge were essentially the same for all four groups.

The four items measuring the perceived state of health were grouped in the same manner as the satisfaction scales. The percentages who felt they had the best or almost the best health now were essentially the same for all four groups. However, the two rural groups had higher percentages who felt their health was good before their surgery, whereas smaller percentages of the urban groups responded in a similar manner. A smaller percentage of the urban near group felt their health was good when discharged than did the other three groups. They also had a smaller percentage who felt their health would be good six months from now.

Summary of Other Variables

Satisfaction with the teaching, anxiety and perceived state of health do seem to differ somewhat between the four groups. Satisfaction is generally high for all four groups. Anxiety and perceived state of health vary somewhat,

dependent on the time frame of the question. However, it appears that rural residents are less worried about their health, and perceive it to be better than do urbanites. The finding is congruent with the literature review, which described rural residents as less disabled by disease.

Chapter Summary

The purpose of the study was to determine the influence of place of residence on patient education received and life-style changes made after coronary artery bypass surgery. In addition, use of lay resource persons and needs for further information were assessed in relation to place of residence.

Although there were few items that indicated statistically significant differences between the groups, there do appear to be some trends indicative of differences. Differences in life-style change between the rural far and urban near groups, and differences in obtaining further information are especially noted. Results of the data are summarized at the end of each section.

CHAPTER 5

SUMMARY, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

The purpose of the study was to investigate the influence of place of residence upon patient education received during a hospitalization for coronary artery bypass surgery. It dealt with the influence of the rural-urban variable upon life-style change, use of lay resource persons and needs for additional information.

Data were obtained by a mailed, self-administered questionnaire. Thirty-eight fitting the rural definition responded, as did 33 fitting the urban definition. There were also 19 that fit neither definition, so a separate category, called "small town," was created to encompass them.

In addition, because the urban group had residents who lived far from the community where surgery was performed, it was felt this group might confound the results if included with the group living in that community. Therefore, the data were reanalyzed for four groups which were defined on the basis of population and distance from the treatment center. Specific findings can be found in Chapter 4.

Summary and Conclusions

From the data it is not possible to conclude that there were statistically significant differences between rural, small town and urban residents on the three research questions. When the groups were defined in terms of distance and population, even though no statistically significant differences can be stated, there do appear to be some differences between the four groups.

The rural far group, especially when compared to the urban near group, showed some interesting differences. More of the rural far group were working or planned to return to work. However, several have had to change their type of work, often as a result of their surgery. The rural far group had less knowledge and complied with instructions less often than the urban near group. Therefore, it would seem that an increased emphasis on knowledge and safe limits of activity would be appropriate for those from rural areas, far from the treatment center. They may need encouragement to decrease stenuous activity and to see the benefits of following activity and dietary restrictions. In addition, exercise outdoors was difficult for them in adverse weather, and they need to be taught how to compensate for this.

The urban group was working less, and spending much more time on sedentary activities. However, their level of knowledge and compliance was fairly high. They may need encouragement to increase activity levels, beginning while hospitalized.

Rural residents are generally more work-oriented and self-reliant than urban residents, according to Kane (1977) and Glenn and Hill (1977). In addition, according to Kane (1977), rural residents are less readily disabled by illness than urbanites. These value differences may make it difficult for rural residents to accept the restrictions following heart surgery. The findings from this study would seem to support this, in as much as the rural residents often worked, and did not comply with exercise instructions as often as the urban groups.

Lay resource use for the four group indicated a very low reliance on lay resource persons. However, the two urban groups and the rural near group do obtain some information from former heart surgery patients. The use of former patients indicates some value in formalizing this network, perhaps through the use of group meetings presented by former patients to new patients. In addition, none of the respondents utilized the nurses at the hospital to

obtain answers. Nurses as potential resource persons needs to be presented as a viable alternative to patients, since these are the nurses primarily responsible for the teaching. In addition, many respondents utilized the telephone to ask additional questions. Perhaps a toll-free telephone to the hospital would facilitate patients obtaining answers.

Further information needed also showed some minor differences between the four groups. Although no definite trends were apparent, it appeared that rural residents, regardless of distance away, were concerned about potential problems. It should be recognized that these residents have fewer resources available, and much longer distances to travel to obtain treatment. This information needs to be stressed with patients from rural areas. All respondents expressed an interest in learning more about risk factors. This information, if emphasized, might prevent future heart disease development.

Generally, the rural near and urban far answers to the questionnaire came closest to approximating the urban near groups. Special teaching provisions could be fairly similar for these three groups, with individual needs considered when necessary. However, the rural far group had some differences that indicate the need to adjust the teaching

program for members of the group. They are more active, yet less compliant, and their knowledge levels are generally lower. They have fewer resources available and information that interests them is often related to potential problems. These factors indicate special needs in teaching.

Limitations

The following limitations are noted in the study:

1. Extensive tests of reliability and validity were not conducted on the questionnaire.
2. The questionnaire was fairly lengthy, requiring approximately 20 minutes to complete. The length may have influenced the rate of return.
3. The respondents may have misunderstood some of the questions, despite an effort to state them clearly and concisely.
4. The respondents may have been influenced by the Hawthorne effect, and thus provided answers which were more positively stated than was realistic.
5. The average length of time since the surgery was nearly eight and one-half months, and without reinforcement of the learning, much forgetting may have occurred.

6. It is recognized that Montana is considered by many to be an entirely rural state, making a definition of "urban" inappropriate.

Recommendations

It is recommended that this study be replicated after first refining and extensively pilot-testing the questionnaire. In an area such as Montana, with a large rural population, it is important to determine if differing values in rural and urban groups do have an influence on patient education and the life-style changes made as a result of that education.

In a replication study, utilizing only farmers and ranchers as rural and those in towns of 20,000 population or greater as urban might indicate further differences between the groups. It is also recommended that this study be replicated using a much larger metropolitan area as the urban sample, and focusing on distance from the metropolitan area in the groups, to determine if further differences exist.

It is recommended that further analysis of the data generated be performed. The data could provide much interesting and relevant information. Especially the influence of any intervening variables needs to be examined.

A clear understanding of the differences in individual learners, for example differing value systems, is extremely important for those engaged in teaching adult learners. Despite the fact that no significant differences were found in this study, it remains imperative that all those planning and implementing educational programs remember that even one or two individuals with different needs and values must have those needs addressed.

It is recommended that nurses be assisted in learning more about learning theory and individual differences. By providing nurses with this information, they would be better able to meet the individual learning needs of their patients.

In addition, nurses need to be made aware of some of the differences in values associated with place of residence, and the influence of these values on the learning situation. Patients from rural areas have some unique needs, which must be addressed by nursing. The apparent difficulty for rural far residents in changing their life-style after coronary artery bypass surgery, as well as their lower level of knowledge and fewer available resources, make them a group which requires special consideration by nurse-teachers. The teaching by nurses should concentrate on enabling them to adjust to the new life-style as well as possible.

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APPENDIX

Greetings,

I am a graduate student in nursing from Montana State University, working on my master's degree in nursing. I know you have had coronary bypass surgery because I obtained your name from Dr. Adams. Both he and I are interested in the type of teaching you received while you were hospitalized. My research project will try to find out how patients felt about the teaching, and if there are ways you might suggest to us to improve the teaching program.

Attached is a questionnaire I would like you to fill out and return to me in the enclosed stamped envelope. No one, including myself, will know your name or the answers you gave. The answers will all be analyzed together as a group. However, it is very important to me to know what your answers to these questions are. Your ideas are very important to us.

The questionnaire will take about 20 minutes to complete, and I think you will find it interesting to do. We sincerely hope that you will choose to answer this questionnaire. However, your participation is voluntary, and you may choose not to answer any or all of the questions. If you are willing to participate in this project, please return the questionnaire by April 25, 1980. Again, I am very interested in your ideas and your answers will be helpful in learning how to improve the teaching given to patients in the future.

Sincerely,

Margaret Taulbee, R.N.
Graduate Nursing Student
Montana State University
Missoula Extended Campus

Many different people played a part in the teaching you received when you had your heart surgery. Below are some statements about several types of them. Please decide how you feel about each statement, then mark the one answer that best describes your feelings on the scale below it. On the scale 0 indicates you strongly disagree with the statement, and 9 indicates you strongly agree. Circle the number along the line that describes your feelings.

1. The nurses told me a great deal of the information I needed to know about my surgery and heart condition.

0	1	2	3	4	5	6	7	8	9
strongly disagree									strongly agree

2. The doctors told me a great deal of the information I needed to know about my surgery and heart condition.

0	1	2	3	4	5	6	7	8	9
strongly disagree									strongly agree

3. The dieticians told me a great deal of the information I needed to know about my diet.

0	1	2	3	4	5	6	7	8	9
strongly disagree									strongly agree

4. The physical therapists told me a great deal of the information I needed to know about my activity and exercises.

0	1	2	3	4	5	6	7	8	9
strongly disagree									strongly agree

5. The nurses made sure that I understood the things they told me.

0	1	2	3	4	5	6	7	8	9
strongly disagree									strongly agree

6. It was always easy to understand what the nurses were talking about.

0	1	2	3	4	5	6	7	8	9
strongly disagree									strongly agree

Following are some questions specifically related to things you may have been told in the hospital. Please mark the one answer you think is best for questions 7-12.

7. One of the risk factors involved in heart disease development is

- ☐ stress and worry
- ☐ drinking alcoholic beverages
- ☐ being too thin
- ☐ exercising too much
- ☐ taught, but don't remember
- ☐ never taught

8. You should stop exercising when your pulse is

- ☐ 80-90 per minute
- ☐ 90-110 per minute
- ☐ 110-120 per minute
- ☐ greater than 120 per minute
- ☐ taught, but don't remember
- ☐ never taught

9. A fat that is high in polyunsaturates and acceptable to use on a low cholesterol diet is

- ☐ coconut oil
- ☐ sunflower oil
- ☐ palm oil
- ☐ lard
- ☐ taught, but don't remember
- ☐ never taught

10. You should check your pulse before taking

- ☐ Isordil
- ☐ Quinidine
- ☐ Digoxin (Lanoxin)
- ☐ Coumadin
- ☐ taught, but don't remember
- ☐ never taught

11. When taking medication to thin the blood, you should watch for

- ☐ chest pains
- ☐ nausea
- ☐ double vision
- ☐ bleeding
- ☐ taught, but don't remember
- ☐ never taught

12. Inderal is used to

- ☐ thin the blood
- ☐ help the heart beat in a normal fashion
- ☐ relieve chest pain
- ☐ relax the heart
- ☐ taught, but don't remember
- ☐ never taught

For various reasons people are often not able to follow their doctor's instructions after they get home. Please indicate the extent to which you were able or not able to follow the doctor's instructions when you got home.

13. To what extent do you feel you have been able to follow the instructions about your diet since your heart surgery?

- ☐ all the time
- ☐ sometimes
- ☐ not very often
- ☐ never

14. Please explain any problems you had in following the instructions.

_____

_____

15. To what extent do you feel you have kept up with the exercises and activity levels as you were instructed?

- ☐ all the time
- ☐ sometimes
- ☐ not very often
- ☐ never

16. Please explain any problems you had in following the instructions.

_____

_____

17. To what extent do you feel you have taken the medicines ordered as you were instructed to do?

☐ all the time ☐ not very often

☐ sometimes ☐ never

18. Please explain any problems you had in following the instructions.

_____

_____

19. From the following list of problems people sometimes have when they get home after heart surgery, please check any that affected or delayed your recovery, or prevented you from following instructions.

☐ home with several stairs up to the house

☐ home with several stairs up to the bedrooms

☐ sick relative at home requiring your attention or care

☐ job that requires heavy physical activity

☐ no one at home to care for you

☐ unable to understand home care instructions given in the hospital

☐ no satisfactory place to exercise

☐ low income, making it hard to buy special foods or medicines

☐ medicines ordered at times of day when difficult to take

☐ no problems arose

☐ other, please explain_____

_____

_____

20. After you left the hospital, how did you go about trying to get the answers to any other questions about your heart and the surgery? (Please check as many answers as apply.)

- ☐ phoned family doctor to ask
- ☐ phoned surgeon who did my coronary bypass surgery
- ☐ made appointment with family doctor to ask
- ☐ made appointment with heart surgeon to ask
- ☐ phoned cardiologist to ask
- ☐ waited until next appointment with cardiologist and asked him
- ☐ asked a friend or relative who knows a lot about health matters
- ☐ asked a friend or relative who has also had heart surgery
- ☐ called the hospital and asked one of the nurses
- ☐ called the county health nurse
- ☐ tried to figure it out myself
- ☐ none of the above; no questions came up
- ☐ other, please explain _____

_____

21. Can you suggest any ways to improve how patients can get answers to their questions after they get home? Please explain. _____

_____

_____

_____

22. Which of the following topics related to heart surgery would you like to have more information on even now? (Check all that apply.)

- ☐ angina pains returning
- ☐ low cholesterol diet
- ☐ returning to work
- ☐ resuming sexual relations

(Continued on next page)

22. Continued----

- ☐ daily exercise and activity
- ☐ taking medications correctly
- ☐ risk factors for heart disease
- ☐ what to do if pulse or blood pressure change
- ☐ what to do for problems with incision
- ☐ what to do for bowel or bladder problems
- ☐ none of the above; wish no more information
- ☐ other, please explain _____

_____

In questions 23-26 there is a picture of a scale from 0-9. Suppose we say that the right of the scale represents perfect health, and the left represents the most serious illness. Please circle your answer to the question on the scale that follows it.

23. Where would you say your health is right now? Please circle the number.

0	1	2	3	4	5	6	7	8	9
worst health									best health

24. Where would you say your health was just before your heart surgery?

0	1	2	3	4	5	6	7	8	9
worst health									best health

25. Where would you say your health was when you were discharged from the hospital?

0	1	2	3	4	5	6	7	8	9
worst health									best health

26. Where would you say your health will be in six months from now?

0	1	2	3	4	5	6	7	8	9
worst health									best health

27. Do you get information from friends or relatives about your heart condition or surgery?

☐ yes ☐ no

If yes, please explain what type of information they gave you. _____

_____

_____

Compare the amount of time you spend now in various activities with the amount of time you spent before your heart surgery. Are you now spending more, less, or the same amount of time on the following activities? Check the choice that applies to you.

	less time now than before surgery	about the same	more time now than before surgery
28. sleeping time			
29. working time (for pay)			
30. watching TV, listening to radio, records			
31. sitting around, doing nothing, taking it easy			
32. reading newspapers, magazines, books			
33. working on hobbies			
34. attending church and other meetings			
35. doing volunteer work			
36. visiting, telephoning friends and relatives			

37. Do you now have a job for pay?

☐ yes ☐ no

If not working at present, do you think you will return to work in the future?

☐ yes ☐ no

If working, is this the same work you did before your heart surgery?

☐ yes ☐ no

If no, what sort of work is it? _____
What was previous occupation? _____
Was job change as a result of your heart surgery?

☐ yes ☐ no

If you are doing the same work, what is your occupation?

_____

In questions 38-40 is a picture of a scale from 0-9. Suppose we say that the left of the scale represents the most worried you can be about your health and the right represents having no worry at all. Circle the number that describes your feelings.

38. How worried are you about your health right now?

0	1	2	3	4	5	6	7	8	9
very worried									not worried

39. How worried were you about your health just before your surgery?

0	1	2	3	4	5	6	7	8	9
very worried									not worried

40. How worried were you about your health when you were discharged from the hospital?

0	1	2	3	4	5	6	7	8	9
very worried									not worried

The following questions will give me a better idea about the types of people who are answering this questionnaire.

41. What is your age? _____

42. What is your sex? ☐ male ☐ female

43. How long ago did you have your heart surgery? (one week, one month, etc.) _____

44. How much education have you had?

- ☐ eighth grade or less
- ☐ some high school
- ☐ completed high school
- ☐ some college
- ☐ four years college completed
- ☐ more than four years college

45. What is the size of the town in which you live?

- ☐ live on a farm or ranch
- ☐ under 500 population
- ☐ population 500-5,000
- ☐ population 5,000-20,000
- ☐ population 20,000-40,000

46. How many miles do you live from Missoula?

- ☐ live in Missoula

actual miles away from Missoula _____

47. When you compare your present income to your income before your heart surgery, has your income

- ☐ dropped a lot?
- ☐ dropped a little?
- ☐ stayed the same?
- ☐ gone up a little?
- ☐ gone up a lot?

THANK YOU!!! Please feel free to make any comments about the education you received in the hospital in this space, or on the back of this page.