



A descriptive survey of rural emergency room nurses knowledge and role perception of advanced cardiac life support
by Daniel Joseph Ellis

A thesis submitted in partial fulfillment of the requirements for the degree of MASTER OF NURSING
Montana State University
© Copyright by Daniel Joseph Ellis (1980)

Abstract:

The purpose of the study was to determine: (1) the knowledge "base of Advanced Cardiac Life Support among registered nurses working in rural hospitals of Western Montana; (2) how nurses perceive their roles as providers of Advanced Cardiac Life Support; (3) possible role problems encountered in the delivery of Advanced Cardiac Life Support in the rural hospital; and (4) if nurses perceive a need for further education in the area of emergency cardiac care. Data were collected from 36 nurses in 16 different rural hospitals. The sample of nurses consisted of 22 diploma graduates, 11 baccalaureate graduates, and two associate degree graduates. There was no difference between the initial nursing educational preparation and the degree held at the time of the interview. Nurses surveyed were required to work at least part time in their hospital's emergency room. Data were collected using an open ended interview guide, a demographic data questionnaire and a multiple choice test. Findings indicated that nursing knowledge of Advanced Cardiac Life Support was deficient according to standards established by the American Heart Association. The nurses' role perceptions in providing Advanced Cardiac Life Support ranged from Basic Life Support only, to include all elements of Advanced Cardiac Life Support. Role conflict, role ambiguity, role incompetence, role incongruity and role overload were identified stressors experienced by nurses as providers of Advanced Cardiac Life Support. All of the nurses interviewed expressed the need for further education in the area of emergency cardiac care.

STATEMENT OF PERMISSION TO COPY

In presenting this thesis in partial fulfillment of the requirements for an advanced degree at Montana State University, I agree that the Library shall make it freely available for inspection. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by my major professor, or, in his absence, by the Director of Libraries. It is understood that any copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Signature

Daniel J. Ellis

Date

6-5-80

A DESCRIPTIVE SURVEY OF RURAL EMERGENCY ROOM NURSES' KNOWLEDGE
AND ROLE PERCEPTION OF ADVANCED CARDIAC LIFE SUPPORT

by

DANIEL JOSEPH ELLIS

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

of

MASTER OF NURSING

Approved:

Ruth S. Ludeman
Chairperson, Graduate Committee

Anna M. Shannon
Head, Major Department

Michael P. Mabe
Graduate Dean

MONTANA STATE UNIVERSITY
Bozeman, Montana

June, 1980

Acknowledgements

I wish to express my sincere thanks and gratitude to Dr. Ruth Ludemann, who served as chairwoman of my thesis committee. Her guidance and support were invaluable and are deeply appreciated.

I would also like to thank Dr. Jacqueline Taylor, Elizabeth Metzgar, Barbara Buckelew and James Turley for their help, encouragement and devotion to this work.

It is also important to acknowledge and extend my gratitude to the nursing directors and nurses of the western Montana hospitals who participated in this project. Without their dedication and cooperation this work would not have been possible.

I would also like to thank my parents, for their constant love and support.

Finally, I wish to dedicate this thesis to my wife Laurie. Words cannot express my appreciation for her continued encouragement, unselfish devotion and support, especially during the final months of this project.

Table of Contents

	<u>Page</u>
Vita	ii
Acknowledgements	iii
Table of Contents	iv
List of Tables	vi
Abstract	vii
Chapter	
I. <u>Introduction</u>	1
Need for the Study	3
Statement of the Problem	7
II. <u>Review of the Literature</u>	8
Conceptual Framework of Role Theory	8
Literature Related to Nursing Roles	15
III. <u>Methodology</u>	18
Definition of Terms	18
Population	20
Collection of Data	21
Instruments	22
IV. <u>Analysis of Data</u>	26
Demographic Data	26
Data Analysis	27
Summary of Findings	41
V. <u>Context of the Study</u>	43

	<u>Page</u>
Summary	47
VI. <u>Summary, Limitations, Implications and Recommendations</u> . .	48
Summary	48
Limitations	49
Implications	50
Recommendations	51
Appendices	53
A. Consent Form to Participate in Study	54
B. Interview Guide	56
C. American Heart Association's Pre-Test	58
D. Demographic Questionnaire	78
E. Map of Montana	81
References	83

List of Tables

<u>Table</u>		<u>Page</u>
1.	Grouped frequency distribution of raw scores on ACLS pre-test for 36 registered nurses	28
2.	Educational level of all respondents and the number of years worked in any emergency room	29
3.	Distribution of each nurses' response and perceived role involvement in each ACLS element (N = 36)	32
4.	Mean scores on the ACLS pre-test and percentages of the sample by levels of confidence in providing ACLS (N = 36. Raw scores range from 14-67.)	37

Abstract

The purpose of the study was to determine: (1) the knowledge base of Advanced Cardiac Life Support among registered nurses working in rural hospitals of Western Montana; (2) how nurses perceive their roles as providers of Advanced Cardiac Life Support; (3) possible role problems encountered in the delivery of Advanced Cardiac Life Support in the rural hospital; and (4) if nurses perceive a need for further education in the area of emergency cardiac care. Data were collected from 36 nurses in 16 different rural hospitals. The sample of nurses consisted of 22 diploma graduates, 11 baccalaureate graduates, and two associate degree graduates. There was no difference between the initial nursing educational preparation and the degree held at the time of the interview. Nurses surveyed were required to work at least part time in their hospital's emergency room. Data were collected using an open ended interview guide, a demographic data questionnaire and a multiple choice test. Findings indicated that nursing knowledge of Advanced Cardiac Life Support was deficient according to standards established by the American Heart Association. The nurses' role perceptions in providing Advanced Cardiac Life Support ranged from Basic Life Support only, to include all elements of Advanced Cardiac Life Support. Role conflict, role ambiguity, role incompetence, role incongruity and role overload were identified stressors experienced by nurses as providers of Advanced Cardiac Life Support. All of the nurses interviewed expressed the need for further education in the area of emergency cardiac care.

Chapter I

Introduction

Heart disease ranks as the number one cause of death in the United States. According to the American Heart Association (1980, p. 24), about 638,000 persons die each year from heart attack, and approximately 350,000 of these die before they reach a hospital. The delivery of Advanced Cardiac Life Support (ACLS) to the patient with a heart attack may prevent a cardiac arrest, while the delivery of Advanced Cardiac Life Support to a person in cardiac arrest may result in the individual's making a complete recovery and returning as a useful member of society. There could be many lives saved each year if Advanced Cardiac Life Support was administered to the heart attack victim (Sladen, 1975, p. 2).

With recent advances in the field of Emergency Cardiac Care, the role of the registered professional nurse has been in a state of change. In 1974, the American Heart Association developed standards which were designed for health care providers of Emergency Cardiac Care. These standards were implemented into a program which the American Heart Association designed to update health care providers, including nurses. Subsequent modifications of the American Heart Association's program and standards were included in various continuing education programs for nurses around the country. Many of these programs were designed for the sole purpose of updating the nurses' knowledge and skills in the coronary care unit. The use of

the materials for educational purposes seems to have reached only those nurses who were involved in coronary care units, emergency rooms, and other critical care areas. A general lack of the information is found in most basic nursing curricula and inservice education programs for general staff nurses. Recent advances have been the implementation of Basic Cardiac Life Support courses for all nurses in both basic nursing programs and continuing education programs in hospitals. Only very recently have registered nurses had the opportunity to attend the American Heart Association's course on Advanced Cardiac Life Support. Inclusion of nurses would seem a logical step to take if the American Heart Association's standards are a nationwide set of standard protocols which the nurse should be using in a cardiac emergency.

A disregard for the continuing inadequacies in emergency nurse education, as well as in basic nursing education, in the area of emergency care has serious implications for the overall quality of patient care. According to Romano (1978, pp. 27-28), managers involved in emergency medical services casually assume that even the most basic level hospital has adequate primary resuscitation capabilities because there is a nurse on duty 24 hours a day. This notion is meaningless unless that nurse has the knowledge and skills to initiate definitive airway and cardiac care, and has the sanction of the physician and hospital to administer definitive treatment in emergency

situations. "In fact, in a rural hospital, the nurse should function just like the paramedic in the field, providing definitive care while in contact with a physician, or while under specific standing orders. Until this is a reality, true resuscitative care in hospitals without full-time physician coverage is only an illusion" (Romano, 1978, pp. 27-28).

Unfortunately, there are a number of discrepancies which exist in cardiac care. In some hospitals, there may be standing orders and physician support for the nurse, but not enough training for the nurses. In others, the situation may be reversed in that the nurses have had extensive training in emergency cardiac care, but they don't have the support of the physician or hospital administration to function in an expanded role. Discrepancies in nursing role, nursing knowledge, and the support of nurses may have a detrimental effect on the overall quality of emergency cardiac care.

Need for the Study

To be successful in cardiac resuscitation, there are many factors which must be taken into consideration. Of primary concern is the timely intervention of appropriate life-saving measures. "Coordination of all phases of resuscitation is necessary. Education is the key. An in-depth understanding of the underlying pathophysiological processes and the consequences of delay in resuscitation is of the utmost importance" (Bander, 1979, pp. xi-xii).

If professional nurses are going to be responsible for initiating Advanced Cardiac Life Support, there should be better means of obtaining the necessary training, and of having medical support for their involvement in providing cardiac emergency care. It is important to know if nurses who are responsible for initiating Advanced Cardiac Life Support possess the knowledge required to be effective in its implementation. It is also of importance to know if nurses who do have knowledge of Advanced Cardiac Life Support are able to practice its implementation without conflict of the medical profession and hospital administration. These factors, along with other variables, may be helpful in determining needs for further improvement in the overall management of a patient requiring emergency cardiac care (specifically, Advanced Cardiac Life Support). Ideally, there should be a coordinated effort on the parts of nursing educators, hospital administrators, and the medical community to insure competent delivery of Advanced Cardiac Life Support by nurses. Competent delivery is especially required in areas where the physician is not present during the first five minutes following a cardiac arrest.

The concept of providing Advanced Cardiac Life Support in the community setting has led to a significant decrease in the mortality rate of myocardial infarction. The assumption which led to the creation of this type of prompt care still holds today: "Many deaths

from myocardial infarction can be prevented by early intervention" (Stewart, 1979, pp. 11-15).

Of the 400,000 to 600,000 persons who die each year of sudden death, most have been attributed to ventricular dysrhythmias (Rogove, 1979, p. 23). When a patient with myocardial infarction develops a cardiac arrest, the dysrhythmia is usually ventricular fibrillation (Sladen, 1975, p. 2). Ventricular fibrillation has been described as an uncoordinated, disorderly, and extremely bizarre contractile process (Granefield, 1973, p. 732). Ventricular fibrillation results in ineffective pumping action of the heart with resulting inadequate tissue perfusion. Ventricular fibrillation was found in 72 percent of over 400 cases of pre-hospital cardiac arrests (Bander, 1979, p. 87). The treatment for ventricular fibrillation is by electrical defibrillation. Kouwenhoven (1969, p. 449) has demonstrated a 98 percent survival rate in animals if defibrillation is performed not more than 30 seconds after the onset of ventricular fibrillation, as opposed to only 27 percent if defibrillation is delayed two minutes. He also has shown that it is much more difficult to defibrillate a heart the longer it has been in fibrillation. In a similar example of the time element involved, Cobb (1977, p. 12) reported that the outcome of patients with out-of-hospital ventricular fibrillation was related to response times of the primary units.

Rockwell (1969, p. 41) notes with regard to hospital coronary care units: "When ventricular fibrillation occurs, the condition must be treated within 240 seconds after onset to prevent irreversible damage to the patient (e.g., brain death). If a physician is not already at the patient's bedside, there simply isn't enough time to summon him before administering treatment". Lemire and Johnson (1972, pp. 970-972), in one of the largest studies done on cardiac resuscitation, found that over a ten year period of time and 1204 patients resuscitated, a cardiac resuscitation service can save one out of five patients undergoing resuscitation in a teaching hospital. The success of the approach was partially due to an organized, quick response to the particular emergency.

Basic Life Support, which consists of mouth-to-mouth breathing and external cardiac compression, must be initiated as soon as possible in the case of cardiac arrest. Basic Life Support measures, however, are only considered a holding operation and are unlikely to convert ventricular fibrillation to a normal sinus rhythm. Therefore, Basic Cardiac Life Support measures must be supplemented with Advanced Cardiac Life Support measures as soon as it is feasible to do so. This will increase the chances of conversion from ventricular fibrillation to normal sinus rhythm.

In the rural areas, it may take an indefinite period of time before the nurse on duty at a hospital can obtain physician support.

The nurse must be capable of dealing with a cardiac arrest situation, if the morbidity and mortality of the nation's leading cause of death is to be reduced.

Statement of the Problem

The purpose of this study is to determine possible nursing problems encountered in the delivery of Advanced Cardiac Life Support in the rural hospital.

Specifically, the following areas will be explored:

1. The knowledge base of Advanced Cardiac Life Support among registered nurses;
2. Nurses' perceptions of their roles in providing Advanced Cardiac Life Support;
3. Possible stressors involved in the delivery of emergency cardiac care, such as role conflict, role ambiguity, role overload, role incongruity, and role incompetence;
4. Is there a perceived need by the nurses for further education in Advanced Cardiac Life Support?

Description of nursing problems encountered in delivering Advanced Cardiac Life Support in rural hospitals can provide valuable information to nurse educators as well as administrators of rural hospitals, both in relation to evaluating educational programs and planning for care.

Chapter II

Review of the Literature

The study of the relationships between the knowledge base of nurses and perceptions of their roles in a specialized area of nursing is clearly related to the broader conceptual framework often referred to as role theory. Conway (1978, p. 23) refers to the complexity of knowledge that is subject to increased role changes and accompanied stress due to advances in technology and complexity of health systems. Nurses are continually faced with the problem of realigning and redefining their roles.

Therefore, the purpose of this chapter is twofold. Literature related to the broad conceptual framework of role theory will be reviewed to provide the theoretical background of the study; and, secondly, literature related specifically to the roles of nurses in providing emergency cardiac care will be reviewed.

Conceptual Framework of Role Theory

Role theory has a broad and diverse conceptual background dating back to the early 20th Century. There have been many sociologists, psychologists, and anthropologists in the past who have contributed to the concept of "role". Historically, the term "role" comes from the French where it was used to describe a round, wooden spool used as a book or scroll-type device. With the emergence of the theater in the early 16th Century, the term role was used to describe the part an actor played or that from which he or she read his/her "part"

(Moreno, 1960, p. 80). The term role was not used in this country until the 1930's. It was about this time that George Mead's work became known. Mead's (1934) work on "Mind, Self, and Society" was published in 1934, posthumously. His contributions to role theory were recognized by others as they reviewed his notes, which had been used in his years as a teacher. Mead used the developmental sequence through which a child moves in the process of socialization to describe a role. He described role development as a process of adopting attitudes and providing one's self with the appropriate stimuli associated with another's role. "When a child does assume a role he has in himself the stimuli which call out that particular response or group of responses" (Mead, 1934, p. 150).

Mead's work served as the foundation of role theory. Other formulations of role, primarily developed by social psychologists, were derived from Mead's work.

Since the concept of status or position is frequently presented as a prior concept in many role formulations, it seems appropriate to define these terms as they relate to role definitions. A status is simply a collection of rights and duties. A role represents the dynamic aspect of status, meaning that when the individual puts the rights and duties which constitute the status into effect, he is performing a role (Gross, 1966, p. 12). There are no roles without statuses or statuses without roles. In short, role apparently has

reference not to actual behavior of an occupant of a position, but to behavioral standards. It consists of attitudes, values, and behavior ascribed by the society to any and all persons occupying a certain status (Gross, 1966, p. 12). Bennett and Tumin (1948, p. 96) define a role as "what the society expects of an individual occupying a given status. This implies that any status is functionally defined by the role attached to it."

Parsons and Shils (1951) describe a different concept of role. Their concept centers around the idea that action is behavior which is geared toward the establishment of goals in which there is a given amount of energy or effort expended.

Each action is the action of an actor, and it takes place in a situation consisting of objects. The objects may be other actors or physical or cultural objects. Each actor has a system of relation-to-objects; this is called his system of orientations. The objects may be goal objects, resources, means, conditions, obstacles, or symbols. They may become cathected (wanted or unwanted), and they may have different significances attached to them. (That is, they may mean different things to different people.) Objects, by the significances and cathexes attached to them, become organized into the actor's system of orientations. (Parsons and Shils, 1951, p. 54)

In this context, a role is a mode of organization of the actor's orientation to the situation. Sarbin (1954, p. 223) defines role as "a patterned sequence of learned actions or deeds performed by a person in an interaction situation." Newcomb (1951, p. 280) defines role as "the ways of behaving which are expected of any individual who

occupies a certain position." Newcomb's definition of role is an appropriate one for incorporation into the conceptual framework of this study. One common concept which comes through rather clearly in each of these role definitions is that each includes something which alludes to the fact that individuals in a social setting will behave with reference to either their own expectations or the expectations of others.

Some expectations of role behavior are dependent on an individual's identity; i.e., male, female, teacher, nurse, physician, or priest. But, it is necessary to specify what location and position in a social system the individual is in before we can place any expectations on that person.

To summarize what has been discussed in terms of role definitions, it can be seen that the term role has been used to denote prescription, description, evaluation, and action; it has referred to covert and overt processes, to the behavior of the self and others, and to the behavior an individual initiates versus that which is directed to him. Perhaps the most common definition is that role is the set of prescriptions defining what the behavior of a position member should be (Biddle and Thomas, 1966, p. 29). The one common denominator which is present in all of these definitions of role, centers around the behavior of an individual in a given setting. Throughout this study, the role of the nurse will be evaluated in

terms of the behavior he or she perceives as appropriate to the role of the professional nurse involved in a given social setting. The specific setting is that of providing Advanced Cardiac Life Support in a hospital emergency room.

With these definitions of the term role in mind, the role concept will be further described to bring the focus of this study into perspective. Role stress and role strain have been seen as major determinants of social behavior in response to the social structure (Hardy, 1978, p. 78). Hardy describes the stress-strain formulation as that of a problematic social condition (stress) leading to individual internal responses (strain). The subjective response of the individual to stress is termed role strain, whereas role stress refers to the demands or external pressures which contribute to role strain. If the problematic condition is one of conflicting, confusing, irritating, or impossible role demands, the condition is role stress. If the role occupant exposed to external demands experiences tension or frustration, the resulting condition is role strain.

Hardy has identified six general problem areas which are stress-strain related. The areas include role ambiguity, role conflict, role incongruity, role overload, role incompetence, and role over-qualification. These problem areas, described by Hardy, have significant meaning in nursing roles as well as many other health-related roles. The focus of this study will primarily address areas of role

ambiguity, role conflict, role overload, role incompetence, and role incongruity as they relate to the role of the nurse.

Role ambiguity has been described by many investigators in many different social settings. Arndt and Laeger (1970, p. 498) investigated directors of nursing services and used "vague or unclear role demands" as a definition of role ambiguity. Bible and McComas (1963, p. 225) studied teachers and used "lack of congruity or consensus on role demands" as their definition. Hardy (1976, p. 24), in her study of hospital nurses, uses the definition of role ambiguity as a "lack of clarity in role expectations." Hardy's definition of role ambiguity may best fit the needs of this study.

The literature related to role conflict has a variety of definitions, as well. Arndt and Laeger (1970, p. 497), in their study of directors of nursing, termed role conflict "conflicting role demands." Hardy's (1976, p. 10) study of hospital nurses described role conflict as "contradictory role expectations." Corwin (1961, p. 664) and Kramer (1968, p. 115, 1969, p. 196) studied hospital nurses and described role conflict as a "disparity between role norms and behavior." Johnson and Stinson (1975, p. 329), in their study of military and civilian personnel, described a "disagreement over role expectations" as a causative factor in role conflict. Simmon's (1968, p. 482) study of first-line supervisors, defined role conflict as "conflicting role expectations."

Role overload may be a factor which relates to stressful work environments. Hardy (1971, p. 16, 1976, p. 18) describes two definitions of role overload as they relate to male college students and hospital nurses. These are "lack of time to meet role demands," and "not enough time to carry out role obligations," respectively.

Role incompetence may result when there are not enough resources available to meet job demands. This can be seen in nurses who have been out of the field for some time and re-enter with a feeling of incompetence due to lack of skills and knowledge to perform competently in the role of a nurse. The increased stress would probably lead to role strain (a subjective response to role stress).

Role incongruity may serve as a source of difficulty in fulfilling role obligations. The role occupant may find that expectations for his performance run counter to his own disposition, attitudes, or values (Hardy, 1976, p. 5). Role incongruity has also been defined by Davis and Olesen (1963, p. 89) as seen when norms in a new role conflict with the occupant's values. Such may occur when role occupants undergo role transition, and when student nurses are faced with learning role expectations and behaviors which conflict with their values.

In conclusion, some of the basic concepts which related to role theory have been presented here. The role of the professional nurse in providing emergency cardiac care will be evaluated in the analysis

of data in terms of role theory and presented in Chapter IV. If the nurse is going to be expected to provide quality intervention in dealing with any emergency situation, it should also be expected that the individual be given the appropriate training to be able to function effectively in an expanded role. The stress and strain which are produced by the problems of role conflict, role ambiguity, role overload, role incompetence, and role incongruity might be less if there were greater recognition of role problems by educators, administrators, and others in the health care field. Role problems will be investigated to gain a more clear and concise picture of how nurses feel and think about their roles.

Literature Related to Nursing Roles

In reviewing nursing literature related to the nurse's role in providing emergency cardiac care, the researcher experienced great difficulty in locating materials relevant to nursing involvement in Advanced Cardiac Life Support.

With the advent of the coronary care units in the 1960's, the role of the professional nurse has been expanded in terms of making more complex judgements and assuming more complicated physician-delegated responsibilities in management of critically ill patients. Nurses no longer make observations, report them, and stand by until their efforts are needed in active resuscitation. Nurses are becoming more active in physical assessment based on sound nursing

frameworks and are able to make sound nursing interventions based on these assessments (Simoneau and Pura, 1978, p. 80).

Nurses are involved in providing ACLS under physician standing orders in a variety of settings. In the state of California mobile intensive care nurses (MICNs) provide direct patient care in a community setting. These same MICNs provide indirect supervision of paramedics via telemetry communication units in the emergency room. The nurse directs the paramedic's management of ACLS procedures, using standard protocols established by the medical staff (Simoneau, 1978, p. 19).

Nurses in other areas of the country are involved in pre-hospital emergency care through air and ground transportation units based at central hospitals. These nurses deliver ACLS while under medical direction (physician's standing orders). Examples of such programs are the "ALERT" program in Kalispell, Montana, and the "Mobile Intensive Care" program in Billings, Montana (Miller, 1980).

For a number of years nurses have been involved in administering ACLS while under direct physician orders. Only recently have the same nurses been given greater autonomy by the medical community in proceeding in certain instances to initiate definitive emergency cardiac care without the physician being present. An example of such a change has taken place in the special care unit of a western Montana hospital (VanDamme, 1980).

With recent advances in basic nursing education in ACLS material, nurses are now graduating from nursing programs more familiar with the usual management of cardiac emergencies than in previous years. Nursing textbooks have reflected increasing emphasis in emergency cardiac care since the advent of the American Heart Association's Standards for emergency cardiac care. Some examples of medical-surgical nursing texts demonstrating these changes are Phipps, Long, and Wood (1979) and Beyers and Dudas (1977).

In conclusion, there were limited materials available to document the involvement by nurses in the area of providing ACLS, especially in the hospital setting. Those references which were cited demonstrate that nurses are accepting increasing responsibility for initiating ACLS in a variety of settings.

Chapter III

Methodology

The purpose of the study was to determine possible problems encountered in the delivery of Advanced Cardiac Life Support in the rural hospitals by registered nurses. Secondly, nurses' knowledge base of Advanced Cardiac Life Support was assessed and finally, possible stressors which are involved in the delivery of Advanced Cardiac Life Support were identified along with the nurses' perceived needs for education in the area of Advanced Cardiac Life Support. The research design utilized for the study was a descriptive, exploratory survey design. The design proved to be very useful to the researcher in exploring problems in the areas mentioned above. An exploratory design was selected because little was found in the literature on the subject matter of problems encountered in the rural hospital and especially in the area of nursing and Advanced Cardiac Life Support.

Definition of Terms

Advanced Cardiac Life Support (ACLS), as defined by the American Heart Association: "ACLS consists of (1) continuing effective basic life support, (2) establishment of intravenous fluid lifelines, (3) more effective ventilation by use of endotracheal intubation or mouth-to-mask ventilation, (4) cardiac monitoring, (5) recognition of certain basic dysrhythmias, (6) defibrillation when necessary, and (7) drug therapy for the primary life-threatening dysrhythmias"

(Carveth, Burnap, Bechtel, McIntyre, Donegan, Buchman, and Reese, 1976, p. 2311).

Basic Life Support (BLS), consists of recognizing respiratory and cardiac arrest and starting the appropriate applications of obstructed airway procedures, or cardiopulmonary resuscitation.

Rural: Living outside a metropolitan area (under 50,000 population).

Rural hospitals: Hospitals of 60 beds and under.

Role ambiguity: A lack of clarity in role demands or expectations.

Role conflict: A disagreement over role demands or expectations.

Role incongruity: Where role performance expectations run counter to one's own disposition, attitude, or value system.

Role incompetence: Inadequate resources available to meet job demands.

Role overload: A lack of time in which to meet role demands.

Role perception: The interpretations the individual makes of the expected functions of a position.

Educational level: Type of preparatory program from which the nurse received her original education in nursing.

Baccalaureate Degree nurse: Graduate of a collegiate nursing program with a Bachelor of Science degree in nursing.

Associate Degree nurse: Graduate of a junior college or community college program with an Associate Degree in nursing.

Diploma nurse: Graduate of a hospital-based training program in nursing.

Population

The population studied consisted of registered nurses working in the rural hospitals of western Montana with bed counts of 60 and under. Each nurse was required to have worked at least part time in their hospital's emergency room.

The number of hospitals contacted was 17, representing all hospitals of 60 beds and under in the western half of Montana, with the exception of a pilot group of hospitals (7) which were excluded from the study. The population surveyed then represents all rural hospitals in western Montana, with the exception of the pilot group of seven hospitals.

The director of nursing at each hospital was contacted by phone to explain the study and ask permission and cooperation in participating with the study. Arrangements were made with each director to meet with as many of the eligible nursing staff as possible on a given date and time. This approach yielded a convenience sampling of each hospital's registered nurses (meaning those nurses who were available on the date arranged and who were willing to voluntarily participate in the study). Approximately 25 percent of the total number of nurses eligible participated in the study. All hospitals

were visited during the day, with the exception of two, which were done in the evening hours.

Collection of Data

After arranging a date and time with the director of nursing at each hospital, the researcher travelled by automobile to the hospital. Some days were arranged so that more than one hospital could be contacted. The average number of hospitals contacted each day was two. Each participant was interviewed individually, and at this time, the researcher fully explained the procedure of collecting the data and emphasized that each person would remain anonymous. A signed consent form for permission to do the study was also obtained at this time (Appendix A). The interviews were done in privacy at a site in the hospital which was most convenient for each staff member, or which was reserved by the director of nursing. Each participant was interviewed using an open ended interview guide (see instrument explanation). Two other instruments were left with each participant to complete and return via mail to the researcher. The last two instruments were the American Heart Association's Advanced Cardiac Life Support Pre-test, along with a demographic data questionnaire. A total of 53 nurses were interviewed, with a total response of 36 questionnaire/tests returned via mail. Those not returning the last two instruments were excluded from the study.

Instruments

Data were collected through the use of three types of instruments. The first was an open ended interview guide designed by the researcher. The instrument consisted of eight items (Appendix B). The purpose of the interview guide was to obtain more information than would be possible in a closed ended, written questionnaire, since no previous similar study was found and the variables which might influence the test scores (second instrument, Appendix C) were unknown. The rationale for each question on the interview follows.

Question 1. How do you perceive your role as a nurse in providing Advanced Cardiac Life Support? This question was designed to explore the degree of involvement that each nurse had in the delivery of ACLS. The question was supplemented with the statement: "What would you do as the nurse in charge of a patient who had just had a cardiac arrest? Tell me exactly what involvement you would have and what you would do as the nurse in this situation." The responses were divided into the following six categories. (These categories are used by the American Heart Association as elements of ACLS.)

- a. Basic Life Support
- b. Use of adjunctive equipment for ventilation and circulation
- c. Cardiac monitoring for dysrhythmia recognition and control
- d. Defibrillating
- e. Establishment of an intravenous infusion
- f. Employing definitive therapy, including drug administration

Question 2. What kinds of frustrations have you had in dealing with cardiac emergencies? This question was designed to elicit responses which might be used to determine possible role stressors, such as role conflict, role ambiguity, role overload, role incongruity, and role incompetence, as well as other problem areas which may have effects on the quality of emergency cardiac care given in the rural areas. The operational definitions of the role terms were used as defined by Hardy (1978), in Chapter II.

Question 3. Generally, how confident do you feel in providing ACLS? This question was used to determine the level of confidence as perceived by each nurse in the delivery of ACLS. The responses were categorized into five areas, ranging from "not very confident" or "poor" to "very confident".

Question 4. Would you say that the experiences you have had in dealing with cardiac emergencies have been more positive or negative?

In what way? Can you give me any examples? A positive-negative response was expected from this question to give the researcher a better idea of how comfortable or worthwhile the total experience of being involved in providing ACLS was to each. The reasons why and examples given will be reported descriptively in Chapter IV.

Question 5. What should the nurse's role ideally be in providing ACLS in your hospital? This question was designed to determine if there was a difference between how nurses perceived their role and what they

thought the ideal role should be. The same categories used in Question 1 were used for comparison of the two answers.

Questions 6 and 7. Do you think ACLS training should be a requirement for professional nurses? The rationale for this question was to determine if the nurses thought ACLS material was important to their functioning as nurses in dealing with cardiac emergencies. If the response was "no", they were asked why. The reasons why are reported in descriptive form in Chapter IV.

Question 8. (If the answer to Number 6 was "yes") Where should this training be taught? This question was not a typical open ended question because there were four responses:

- a. Undergraduate education
- b. Inservice education department, i.e., at the time of orientation to the hospital
- c. Both a and b
- d. Other

The second instrument used was the American Heart Association's pre-test for their Advanced Cardiac Life Support course (Appendix C). This tool was chosen because it covered all areas of Advanced Cardiac Life Support content. As far as the researcher could determine, the pre-test has not been checked for validity and reliability (Britton, 1980). The pre-test consisted of 73 multiple-choice questions which were questions relating to the different elements of Advanced Cardiac Life Support. The questions cover the content which would be

utilized by the nurse if he or she were involved in delivery of ACLS in the rural hospital setting. Raw scores were used in reporting the data and were used as the basis of knowledge for ACLS. Permission to use the tool was obtained in writing from the American Heart Association.

The third instrument used was a closed ended questionnaire designed by the researcher to collect demographic data on each participant (Appendix D). A total of 15 questions was included in the instrument. The information was used in making comparisons between scores for the participants and some of the demographic data collected.

Chapter IV will cover the reporting of data analysis and discussion of the findings.

Chapter IV

Analysis of Data

This chapter will present the data which was collected from 36 nurses in 16 different rural hospitals of western Montana during the Fall of 1979.

Organizationally, the findings have been divided into the following four basic areas which the project was designed to explore:

- (1) the knowledge base of registered nurses in the area of ACLS;
- (2) the nurses' perceptions of their roles as providers of ACLS;
- (3) the identification of possible role stressors, such as role conflict, role ambiguity, role overload, role incongruity, or role incompetence; and
- (4) whether there is a perceived need by the nurses for further education in ACLS. A description of the population sampled is given preceeding the data analysis.

Demographic Data

The sample of 36 registered nurses consisted of two associate-degree graduates, 22 diploma graduates, and 11 baccalaureate graduates. All participants were female. The range in years of nursing experience was from one to over 20, with the largest group having over 20 years of experience. Of the nurses sampled, 78 percent worked full-time, and 61 percent completed their nursing education in Montana. There were no ages used in the demographic data collection tool. Of the 36 respondents, only three had completed the American Heart Association's course in ACLS. Most of the respondents

had received some form of training in cardiac care. However, four had never received any special training in emergency cardiac care.

There was no difference between the basic nursing preparation received and the educational level which each nurse presently held. In terms of education received in emergency cardiac care (demographic data, Question 7), exactly 50 percent had received some form of training in the past year. Twenty-two percent had received training within the past two years, and 8 percent had received training within the past three to four years. There were another 8 percent who had not received any training in emergency cardiac care for over four years, and 11 percent had never received any formal training in emergency cardiac care.

Data Analysis

Part 1. Knowledge base of ACLS among the 36 registered nurses in the sample. (The highest possible score was 73.)

The mean raw score for the group was 34.78, with a standard deviation of 10.83. The scores ranged from 14 to 67, with a mode of 36. The American Heart Association considers a score of 85 percent on their post-test for the ACLS course a passing score. If the 85 percent passing figure were used as the criteria for a passing score on the pre-test, it would mean a raw score of 62 or greater. Only two participants in the survey population scored above 62, and there were 14 of the 36 participants who ranked above 50 percent

on the test. A grouped frequency distribution of raw scores is shown in Table 1:

Table 1. Grouped frequency distribution of raw scores on ACLS pre-test for 36 registered nurses

<u>Class Interval</u>	<u>f</u>
65-69	2
60-64	0
55-59	0
50-54	0
45-49	1
40-44	5
35-39	10
30-34	5
25-29	9
20-24	1
15-19	2
10-14	1
	<hr/>
Total	36

Analysis of Variance for the raw scores and the three educational backgrounds of associate degree, baccalaureate, and diploma were done. This yielded an f-ratio of 0.49, indicating that there was no significant difference between raw scores and basic nursing educational preparation at the .05 level of confidence. The f-ratio would have had to be 8.59 or greater to be considered significantly different.

Analysis of Variance for raw scores and the number of years worked in any emergency room was also done. The f-ratio for the group was 0.12. There was no significant difference between raw

scores and the number of years worked in any emergency room. The range of experience in any emergency room was from under one year to over 20 years, with the largest concentration of experience falling into the two-to-five-year category (33 percent). The largest number of nurses interviewed were graduates of diploma nursing programs. Table 2 indicates the relationships between length of time worked in any emergency room and the educational preparation of the population sampled.

Table 2. Educational level of all respondents and the number of years worked in any emergency room

Educational Level	Number of years worked in any emergency room						Total
	Under 1 year	1-2 years	2-5 years	5-10 years	10-20 years	Over 20 years	
Associate			2				2
Diploma	2	1	5	7	4	3	22
Baccalaureate	1	2	5	1	2	1	12
Raw Totals	3	3	12	8	6	4	36

Part 2. Data collected from interviews.

Question 1 from the interview was: How do you perceive your role as a nurse in providing Advanced Cardiac Life Support (ACLS)?

The question yielded answers which were categorized into the six

basic elements of ACLS. The six basic elements (categories) of ACLS are as follows:

1. Basic Life Support
2. Use of adjunctive equipment for ventilation and circulation
3. Cardiac monitoring for dysrhythmia recognition and control
4. Defibrillation
5. Establishing and maintaining an intravenous infusion lifeline
6. Employing definitive therapy, including drug administration

Of the 36 respondents, 69 percent indicated they would provide basic life support (Category 1), and 64 percent would use some form of airway equipment to assist in ventilation (Category 2).

Cardiac monitoring and dysrhythmia recognition and control (Category 3) were mentioned by 83 percent of the respondents as an area they would get involved in. Fifty-six percent of the respondents would utilize defibrillation, if needed. A large percentage (83 percent) of the respondents would start an intravenous infusion. Only 52 percent of the 36 nurses would employ definitive therapy, including drug administration. This last figure was probably due to lack of standing orders in terms of the nurses' responsibility for initiating definitive therapy.

Table 3 demonstrates each nurses' response to their perceived role involvement as providers of ACLS. Many of the nurses did not mention basic life support as part of their perceived role involve-

ment. The researcher questions whether or not nurses understood that Basic Life Support is an element of Advanced Cardiac Life Support. (these findings are illustrated in Table 3).

The second question on the interview asked: What kinds of frustrations have you had in dealing with cardiac emergencies? This was analyzed by grouping the data gathered into six categories relating to role stressors (i.e., (1) role conflict, (2) role ambiguity, (3) role incompetence, (4) role incongruity, (5) role overload, and (6) other). Each of the role categories are presented separately.

1. The operational definitions of role conflict as used by Hardy (1976) and Simmons (1968) will both be used in this categorization of role stressors. Hardy (1976, p. 10) refers to a "disagreement over role demands," and Simmons (1968, p. 482) refers to "conflicting role expectations" in defining role conflict. Some of the responses which would fit into this category are as follows: confusing role expectations, no consistency in demands made by physicians for the amount of involvement in terms of providing emergency cardiac care, not enough or unclear standing orders for ACLS, feelings of too much responsibility, and too much demanded of the nurse in emergency cardiac care by peers and physicians.

The answers related to role conflict are a grouped response and reflect the attitude of more than one respondent. It is interesting to note that some of the nurses expressed a strong feeling of too

