

A STRUCTURED TEACHING PROGRAM ON CONGESTIVE
HEART FAILURE FOR ELDERLY CLIENTS'
KNOWLEDGE LEVEL

A THESIS
SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTER OF SCIENCE
IN THE GRADUATE SCHOOL OF THE
TEXAS WOMAN'S UNIVERSITY

COLLEGE OF NURSING

BY
MARY AUGUSTINE KELLY, R.N., B.S.N.

DENTON, TEXAS

AUGUST 1986

TEXAS WOMAN'S UNIVERSITY
DENTON, TEXAS

4/30/86

Date

To the Provost of the Graduate School:

I am submitting herewith a thesis written by

Mary Augustine Kelly, R.N., B.S.N.

entitled A Structured Teaching Program on Congestive

Heart Failure for Elderly Clients' Knowledge Level

I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Nursing.

Susan Goad
Major Professor

We have read this thesis and
recommend its acceptance:

Sandra Strickland
Lair Watson

Accepted

Leslie M. Thompson
Provost of the Graduate
School

"I will study and get ready, and perhaps
my chance will come."

--Abraham Lincoln

A STRUCTURED TEACHING PROGRAM ON CONGESTIVE HEART
FAILURE FOR ELDERLY CLIENTS' KNOWLEDGE LEVEL

ABSTRACT

MARY AUGUSTINE KELLY, R.N., B.S.N.

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

AUGUST 1986

This study examined the amount of knowledge retained by elderly clients who received a structured teaching program on congestive heart failure (CHF) by a visiting nurse. The theoretical framework was based on Rogers' learning theory. The study was a quasi-experimental research study using a one group pretest-posttest design. A researcher-developed tool was used as the instrument. Intervention then took place in the form of a structured teaching program on CHF. Information was presented during three home visits in 1 week. Two weeks later, the instrument was readministered. The hypothesis was tested using the paired t-test.

Statistical analysis led to the acceptance of the hypothesis at $< .001$ level of significance. There was a change in the pretest-posttest scores as a result of the CHF teaching program. The group's test score increased an average of 3.24 points.

TABLE OF CONTENTS

ABSTRACT	iv
LIST OF TABLES	vii
Chapter	
I. INTRODUCTION	1
Problem Statement	2
Justification of the Problem	2
Theoretical Framework	5
Assumptions	8
Hypothesis	8
Definition of Terms	8
Limitations	10
Summary	10
II. REVIEW OF LITERATURE	12
Congestive Heart Failure	12
Significance of Increased Patient Knowledge Levels	16
Teaching Role of the Home Health Nurse	22
Summary	28
III. PROCEDURE FOR COLLECTION AND TREATMENT OF DATA	30
Setting	31
Population and Sample	31
Protection of Human Rights	32
Instrument	33
Data Collection	35
Treatment of Data	36
IV. ANALYSIS OF DATA	37
Description of the Sample	37
Findings	38
Summary of Findings	40

V. SUMMARY OF THE STUDY	41
Summary	41
Discussion of Findings	44
Conclusions and Implications	45
Recommendations for Further Study	46
REFERENCES	48
APPENDICES	
A. Teaching Program	53
B. Questionnaire	57
C. Research Review Committee Approval	64
D. Approval Letter from Graduate School	66
E. Agency Permission	68
F. Oral Explanation of the Study	70
G. Follow-up Letter to Subjects	72
H. Raw Data	74

LIST OF TABLES

1. Sample Distribution by Age 38
2. Summary Statistics for Pretest and
Posttest Scores 39

CHAPTER I

INTRODUCTION

One of the most common cardiac conditions that must be treated by health care personnel is congestive heart failure (CHF), which can result from any cardiac condition that reduces the ability of the heart to pump blood. The estimated 1983 incidence of congestive heart failure in the United States was 214,000 men and 184,000 women. The estimate of prevalence was 2.3 million persons, with a remarkable increase with advancing age (Smith, 1985).

In the elderly, congestive heart failure is a significant problem. The overall goal of care for patients suffering from congestive heart failure is to reduce or eliminate the causative factors that lead to symptoms and complications. This goal can be partially accomplished through patient education. The goal of patient education is to increase the quality and quantity of life and to prevent future hospitalizations. Nurses assume an important role in the education process, particularly in the home setting. Home health care is becoming an important trend in the American health care system for many reasons. The first reason is that more people are living longer. Members of the fastest growing

age group in America are 85 and older. Another reason is the increasing attention towards prevention and wellness. Still, another factor is the growing need for government and the private sector to cover the health care needs of more people at 65. The purpose of this study was to examine knowledge levels of congestive heart failure clients during home visits.

Problem Statement

The problem of this study was to determine if there was a difference in elderly congestive heart failure clients' initial knowledge about congestive heart failure compared to their knowledge level after a structured teaching program on congestive heart failure during home visits.

Justification of the Problem

The prevalence of cardiac failure rises progressively with increasing age. Its prevalence during the last year of life in persons 65 to 74 years of age is 4 times that in individuals 45 to 64 years of age. For persons over 75 years old, the prevalence is 10 times that in individuals 45 to 64 years old. About 75% of ambulatory patients with cardiac failure are over the age of 60 years (Smith, 1985).

The elderly individual with cardiac failure must seek competent medical care and then strictly follow the specified regimen. Often compliance with professional recommendations is lax. Clients do not closely follow the physician's advice regarding diet, medications, and stress management because they do not comprehend the seriousness of CHF and its complications (Podell & Gary, 1976).

Education about CHF and its treatment is a way to alleviate patient ignorance (Podell & Gary, 1976). It is also a possible way of decreasing patient noncompliance with their treatment method (Podell & Gary, 1976).

According to Podell and Gary, patient understanding of the purpose and details of a therapeutic regimen has been viewed as essential to obtaining high compliance. Lewis (1976) emphasized that efforts to involve the patient in his/her care and to instruct him/her concerning the nature of his/her particular problem are a vital element in caring for the older person with cardiac disease.

Rocella (1976) revealed in a public health report that there is significant evidence that education of patients could reduce the cost of health care. This entailed teaching patients to understand the nature of their illness and what they can do to help themselves, and also education of the public to use new methods of health

service delivery. Donabedian and Rosenfeld (1964) agreed that if a decrease in hospital readmissions, reduction in the length of hospital stays, as well as an improvement in the general health and quality of life in patients can occur with an educational process, then efforts in this direction should continue and be constantly improved.

In a study at St. Luke's Hospital Center in New York, outpatients were studied to determine the effect of public health nursing follow-up on ambulatory patients with congestive heart failure. At the end of a 3-year period, researchers verified that the 96 patients in the project did have fewer hospital admissions and days in the hospital for congestive heart failure than did the control groups of outpatients who did not receive the public health nursing service. The most frequent nursing need identified in these patients was the assistance they required in order to adhere to the treatment plan (Hanchett & Torrens, 1967).

The effects of teaching on knowledge levels of elderly congestive heart clients have not been assessed in nursing research to a great extent. The retention of knowledge can best be assessed through ongoing research.

Theoretical Framework

The theoretical framework of this study was Rogers' (1969) learning theory. There are many categories of learning, ranging from rote memorization, the most basic, to significant learning, the ideal. Whether the information will be forgotten quickly, or used and remembered for a lifetime, determines the category. The type of learning one strives for is, of course, significant learning.

In his theory, Rogers (1961) discussed five conditions which need to be present for significant learning to occur. The client is, first of all, against a situation which he perceives as a serious and meaningful problem. He has an uncertain and ambivalent desire to learn or to change, growing out of a perceived difficulty in meeting life.

Secondly, the teacher is characterized by a considerable degree of congruence in the relationship. Rogers (1961) asserted the teacher should be the person he or she is and be openly aware of the attitudes he or she holds.

A third condition is that the instructor experience a warm caring for the client--one that demands no personal gratification. Significant learning is likely to take

place when the instructor can provide this comforting positive approach.

A fourth condition for learning is that the instructor experience an empathetic and accurate understanding of the client's world as seen by the client. Rogers (1961) described the condition in which the instructor senses the client's anger, fear, or confusion as if it were his or her own; yet, keeping these distinct from his or her own feelings.

The fifth condition needed for significant learning is that the client should perceive something of the instructor's congruence, acceptance, and empathy. Rogers (1961) indicated it is not enough that these conditions exist in the instructor. They must be successfully communicated to the client.

Rogers (1969) has incorporated his beliefs into several principles. Human beings have a natural potentiality for learning. Significant learning takes place when the subject matter is perceived by the student as having relevance for his own purposes. Learning which involves a change in the perception of oneself is threatening and tends to be resisted. Learning concepts which are threatening to the self are more easily perceived and assimilated when external threats are at a

minimum. When threat to the self is low, experience can be perceived in a differentiated fashion and learning can proceed. Much significant learning is acquired through doing. Learning is facilitated when the student participates responsibly in the learning process. Self-initiated learning which involves the whole person of the learner, feeling as well as intellect, is the most lasting and pervasive. Independence, creativity, and self-reliance are all facilitated when self-criticism and self-evaluation are basic to the student. Evaluation by the teacher or others is of secondary importance.

Rogers' (1969) most important principle is that man's greatest achievement is to learn to change and to adjust to current conditions and the environment. In today's world, learning is a never-ending process. If man realizes this, he will be able to grow and adapt; if not, he will die.

Rogers' learning theory provided a framework for the present study. The elderly, by virtue of their age, have experienced much change and adjustment during their lives. Knowing that learning is a part of adjustment, clients should want to learn and improve their knowledge base regarding personal health. According to Rogers' (1969) theory, all of the elderly participants should

demonstrate concern and active interest in learning about their health status in relation to congestive heart failure because they all possess the condition.

Assumptions

For the purpose of this study, the following assumptions were made:

1. Elderly persons with congestive heart failure are interested in their health status. They will be self-motivated because they have the condition (Rogers, 1969).

2. Personal interest stimulates the elderly person to learn more easily and more thoroughly (Rogers, 1969).

Hypothesis

For the purpose of this study, the following hypothesis was tested:

There will be a difference in the pretest and posttest scores on the Congestive Heart Failure Knowledge Questionnaire for elderly congestive heart failure clients before and after a structured teaching program on congestive heart failure during home visits.

Definition of Terms

The terms were defined for the purpose of this study. They were as follows:

1. Elderly congestive heart failure clients

--individuals 65 years old or over who have been informed by their physicians that they have congestive heart failure, and who are home health clients of the agency chosen for this study.

2. Structured teaching program on congestive heart failure--a formal instruction program on congestive heart failure. Components of the teaching program include objectives, content, and teaching methods. Information was given 3 times during home health visits on an individual basis by the investigator utilizing Rogers' teaching principles (Appendix A).

3. Congestive Heart Failure Knowledge Questionnaire--a series of questions taken directly from the congestive heart failure teaching program, that examines a participant's learning of content material. Pretest scores are the scores recorded on the questionnaire before the teaching program and posttest scores are those 2 weeks following the structured teaching program (Appendix B).

4. Home visits--temporary, intermittent, skilled visits in a patient's home by a registered nurse for the purpose of monitoring, teaching, and treatment of congestive heart failure. Clients are referred to the

home health agency from the hospital or doctor's office by a physician's order.

Limitations

The limitations of this study were:

1. The subjects were obtained from one agency; therefore, the convenience sample size was small and the results were not generalized.
2. The variables of marital, education, and financial status were not controlled.
3. The instrument was researcher developed and non-extensive validity and reliability testing were done.
4. Prior knowledge level of clients was not controlled.

Summary

Congestive heart failure is a common disease entity, especially in the elderly. Good management of the patient with chronic congestive heart failure can be achieved if the patient is educated on diet, medications, and detection of the early signs and symptoms of impending congestive heart failure (Duncklee, 1984).

This study examined the amount of knowledge retained by elderly clients who received a structured teaching program on congestive heart failure by a visiting nurse.

The theoretical framework used was based on Rogers' (1951, 1961, 1969, 1977) learning theory. Significant learning requires motivation, personal interest, and a comfortable non-threatening environment. Under these conditions, the learner has an opportunity to gain substantial information, remember it for a long period of time, and perhaps change attitudes or behavior.

There were several limitations of the study. The subjects were obtained from one agency, therefore, the convenience sample was small. The variables of marital, education, and financial status were not controlled. The instrument used was researcher developed and non-extensive validity and reliability testing were done. Finally, the clients' prior knowledge levels were not controlled.

CHAPTER II

REVIEW OF LITERATURE

This chapter reviews literature related to the concepts of congestive heart failure, patient teaching, and the teaching role of the home health nurse. The review of literature is divided into three sections. The first section describes the incidence, pathophysiology, and management of congestive heart failure. In the second section, various patient teaching studies are reviewed with an emphasis on the significance of increased patient knowledge levels, congestive heart failure, and the elderly. The final section contains material regarding the teaching role of the home health nurse.

Congestive Heart Failure

Heart disease is this nation's number one health problem. Forty million Americans have diseases of the heart or blood vessels. Four million of these citizens are thought to have heart failure (Weber, 1982). Irrespective of etiology, failure of the heart's pumping function not only leads to the signs and symptoms of the heart failure syndrome, but also, seriously shortens patient survival (Weber, Likoff, Janicki, & Andrews, 1984). As with any disease entity, congestive heart

failure patients often have a poor knowledge base or misconceptions about their condition. Studies (Hecht, 1974; Marsh & Perlman, 1972) have indicated that a patient's knowledge level about his/her condition is often related to the adherence to treatment.

According to a 20 year follow-up of the Framingham study, the prevalence of cardiac failure rises progressively with increasing age (McKee, Castelli, McNamara, & Kannel, 1971). Its prevalence during the last year of life in persons 65 to 74 years of age is 4 times that in an individual 45 to 64 years old. About 75% of ambulatory patients with cardiac failure are over the age of 60 (Alpert, 1984). The Framingham study revealed that the probability of death within 4 years of first diagnosis of cardiac failure is 52% for men and 34% for women regardless of the underlying cause (McKee et al. 1971).

Congestive heart failure is not a disease, but a pathophysiologic state in which the heart fails to pump efficiently enough to meet the metabolic demands of the body (Duncklee, 1984). Congestive heart failure can develop from a number of causes including myocardial infarction, coronary artery disease, cardiomyopathy, valvular diseases, arrhythmias, bacterial endocarditis, or hypertension.

Regardless of etiology, there are two pathophysiologic components to myocardial dysfunction. First, the volume of blood pumped by the heart is chronically reduced, thus, leading to decreased perfusion of vital organs. The chambers of the heart are then unable to efficiently accommodate the volume of blood returning to them, resulting in elevated pressures that are transmitted backwards to the venous side of the circulation (Klein & Visocan, 1984).

Several physiologic compensating mechanisms then take place. Because the kidney is underperfused, renin and aldosterone are released which causes sodium and water retention. This leads to an increase in the preload or precontraction volume. Via the Starling mechanism, increased stretch on cardiac muscle from the increased preload causes a more forceful contraction of that muscle. Release of catecholamines (epinephrine and norepinephrine) further augments myocardial contractility and also increases cardiac output by an increase in heart rate. In some etiologies, the myocardium hypertrophies to increase the muscle mass of the heart (Braunwald, 1981).

Initially, these compensatory mechanisms may be adequate to maintain a cardiac output sufficient to meet the peripheral demands, but each of these mechanisms has a

limited potential and ultimately fails. Pump failure then ensues and cardiac output is decreased. This reduced cardiac output is usually evident first with exertion and causes symptoms of fatigue and weakness. Ventricular enlargement and elevated venous return increase the pulmonary and peripheral edema. If a chronically low cardiac output is present, the sympathetic nervous system is activated, which increases the peripheral resistance by causing peripheral vasoconstriction. Sympathetic nervous activity and renal vasoconstriction activate the renin-angiotensin mechanism which further increases the peripheral resistance and causes retention of sodium and water. The expansion of blood volume or excessive accumulation of fluid is responsible for many of the clinical signs and symptoms seen in congestive heart failure (Braunwald, 1981).

By understanding the pathophysiologic mechanisms occurring in congestive heart failure, therapeutic solutions can be designed for each problem. Treatment consists of three general therapeutic modalities: (a) improvement of the heart's pumping performance, which results from efforts to restore the contractility of the failing heart toward normal; (b) reduction of the heart's workload, which involves reduction of the demands placed

on the heart to generate pressure or to pump blood; (c) control of excessive salt and water retention, that is, control of the expansion of extracellular fluid volume, which is the principal cause of many manifestations of heart failure, such as dyspnea and edema (Braunwald, 1981).

Significance of Increased Patient Knowledge Levels

In an early study by Pratt, Seligman, and Reader (1957), 214 medicine clinic patients were studied. The patients who received some explanation of their illness from their physicians were more likely to comply with the medical regimen than those patients who received little information about their condition.

Some investigators of patient knowledge and compliance have supported the premise that increased patient knowledge also increases patient compliance. Simonds (1967) studied 75 patients with a diagnosis of congestive heart failure. The subjects in this study were followed in an outpatient clinic where they participated in an educational program related to drug therapy. After initiation of this program, a decrease in readmission of these patients to the hospital was noted. Simonds concluded that it is possible to achieve improved adherence to a prescribed regimen, and decrease

readmissions to the hospital for congestive heart failure by use of continuing educational programs.

Neely and Patrick (1968) studied patients, aged 60 and over, who lived at home, and who were under private medical care to determine if medications were being taken as prescribed. The setting was an urban-rural clinic in Seattle, Washington. Of the 59 respondents who were interviewed, 22 had a cardiovascular disease; 12 respondents had arthritis, bursitis, or neuritis; 6 had diabetes; and 19 had varying diagnoses, including upper respiratory infections, obesity, Parkinsonism, carcinoma, ulcer, and bronchiectasis. Fifty-nine percent were judged to have made medication errors. Nearly one-half (48%) of all errors were errors of omission. The next type of error observed most frequently was that of inaccurate knowledge, representing about one-third (34%) of all errors. Fifteen percent of all errors were related to self-medication. Neely and Patrick (1968) suggested teaching older patients prior to discharge. By initiating self-medication during hospitalization and utilizing the public health nurse to routinely visit the homes of older patients to review medications with the patient, could increase medication compliance and decrease errors.

Tagliacozzo and Ima (1970) found a significant relationship between patient's knowledge level about the disease and clinic attendance. The sample was composed of 159 black, clinic outpatients with diagnoses of hypertension, arthritis, diabetes, or cancer. The subjects took tests evaluating their knowledge about causes, symptoms, and complications of the disease. It was discovered that patients with low scores were more likely to discontinue their treatment program prior to their fourth clinic visit. Of all the patients, the role of knowledge was the most significant in the hypertensive patient. Overall, knowledge about symptoms was higher than knowledge about complications. Tagliacozzo and Ima concluded that increasing knowledge levels of patients regarding their disease can promote patient motivation in continuing care.

Rosenberg (1971) reported that a multidisciplinary education program for 50 patients with congestive heart failure increased the patient's knowledge of his disease, medication, and diet as well as his adherence to a prescribed regimen. When studied against the control group, readmissions and total readmission days were significantly reduced.

Stewart and Cluff (1972), in a review of several studies on medication errors, found an increasing tendency toward compliance in patients who understood the purpose and knew the names of their medications. Soflin, Young, and Clayton (1977) revealed in a study that educational programs for congestive heart failure patients maintained on digoxin therapy resulted in increased knowledge of the disease and medication resulting in reduced numbers of hospital readmissions. Sackett et al. (1975) referred to education of patients in the areas of their diseases and treatments as a time-honored approach to gaining their cooperation.

Marsh and Perlman (1972) interviewed 60 congestive heart failure patients attending the medical clinic at Milwaukee County Hospital to determine the level of their understanding of the disease in order to correlate patient understanding, clinical characteristics, and self-administration of digoxin. It was found that 34 to 60 had no understanding of congestive heart failure which, for the purpose of the study, was defined as a realization that the heart was failing and that, with medication, the condition could be improved. Lack of understanding was significantly correlated with failure to take medications and with an increased rate of hospitalization.

McKenney, Slining, Henderson, Devins, and Barr (1973) study of 50 hypertensive patients receiving prescribed medication showed that an instruction program which increased knowledge of hypertension and its treatment also increased compliance. Twenty-five of the patients were assigned to a study group and a structured, individual program about hypertension and antihypertensive therapy was administered. The remaining 25 patients were assigned to the control group and received the usual care by physicians. Both control and study groups completed a 21-item test measuring knowledge of hypertension and its treatment before and after the 5-month study period. Results showed that knowledge of hypertension and its treatment significantly improved in the study group. Also, there was a significant increase in compliance among these patients as compared to the control group.

Hecht (1974) studied adult tuberculosis patients attending the chest clinic at a large county hospital in Buffalo. Results of the study showed that a large improvement in the accuracy with which patients take their medications occurred with increased amounts of teaching.

Deberry, Jeffries, and Light (1975) discussed a cardiac medication teaching program which employed the one-to-one nurse patient conference. The goal was to help

cardiac patients acquire and retain sufficient information for adequate care after leaving the hospital. The program consisted primarily of medication information. Evaluation of this program consisted of a pretest, a posttest prior to discharge, and a posttest in the clinic 2 to 4 weeks following hospital discharge. A study of 29 patients demonstrated an increase in knowledge between the pretest and the first and second posttests.

Galton (1976) in studying the elderly population determined the greatest lack of knowledge of medications to be on side effects. Nearly 75% of the patients surveyed were found ignorant of any symptoms indicative of possible adverse reactions. The use of any potent drug involves a calculated risk which should be justifiable in the decision to use the drug. Yet, patients can minimize possible risks by having knowledge of potential risks and knowing when to alert the physician.

Kirscht and Rosenstock (1977) studied factors which influenced hypertensive patients' adherence to their treatment regimen. Based on personal interviews with 132 patients, they found that knowledge about high blood pressure in general was low. Many patients did not know the condition for which they were being treated. Others were unsure or had no idea if their medication was for

their blood pressure or some other problem. Those subjects who knew the purpose of their medications were much more compliant in taking them.

In regard to patient education, Kirscht and Rosenstock (1977) concluded that understanding hypertension as a disease entity was not significant to compliance. There was a significant relationship, however, between understanding the purpose of the treatment regimen and adherence to it.

Teaching Role of the Home Health Nurse

Home health nursing is not a new concept. Public health nursing dates back to medieval England, but professional community health nursing did not become a part of nursing until the 20th century (Fromer, 1983). The recent attention focused on home health nursing has come as a result of the over-burdened health care delivery system in America. The elderly are living longer and Medicare and other third-party payers have been forced to make drastic changes in their policies. Patients are being discharged from the hospital earlier, thus the need for home health nursing has increased. Skilled assessment, care, and education in the home setting are the major roles of the home health nurse (McDonald, 1981). The teaching role of the home health nurse

encompasses a wide range of approaches to rehabilitation that are designed to increase the capacity of the patient for self-care.

Despite its importance, the teaching role does not receive the emphasis that it should. According to Podell and Gary (1976), a major problem is that physicians are disease oriented and not education oriented. These authors suggested that doctors tended to overestimate the patient's understanding of instructions and compliance with those instructions. Wilber and Barrow (1972) also reported that physicians are not oriented toward the teaching aspects of patient care. Often patients are not fully instructed regarding their medication schedule and its importance.

Weinberg (1974) noted that frequently a patient is given discharge instructions by the physician on the day of discharge, and this is not sufficient for retention of the information. Often patients need indepth instruction on medications, diet, activity, and about the disease such as when to seek medical treatment, in order to adjust to the illness and live with it as effectively as possible (Allendorf & Keegan, 1975; Weinberg, 1974; Wenger, 1975).

Graham (1969) studied patients' perceptions and found that knowledge became irrelevant or unnecessary to acutely

ill cardiac patients and information given in the hospital was often not retained. Marks and Clarke (1978) reported that during hospitalization, patients are given medications on a correct schedule and in correct dosages by the nursing staff, but often without explanation. Upon hospital discharge, however, patients assume total responsibility for this crucial aspect of their care. Successful rehabilitation of cardiac patients depends not only on adjustment to physical limitations and psychological problems related to cardiac disease, but also upon adherence to medical regimens (Marks & Clarke, 1978). Follow-up studies of chronically ill patients have demonstrated the high rate of noncompliance with prescribed medical regimens (Donabedian & Rosenfeld, 1964). Investigators have attributed this lack of compliance to inadequate information given about the illness and its treatment and failure of the patient to understand that which is given (Donabedian & Rosenfeld, 1964; Mazzulo & Lasagna, 1972; Royle, 1973).

In a study of postmyocardial infarction patients, Rahe, Scalz, and Shine (1975) had the patients evaluate their cardiac teaching program. Rahe et al. stated that the patients were unable to synthesize or remember

information they were given in the immediate recovery period in the hospital.

Ideally, the teaching process should be accomplished when the learner is totally ready to receive the information. Studies show that the best learning may take place after discharge from the hospital because more problems can be identified and resolved at this time (Morgan, 1976).

Inadequate programs to teach patients about their medications prior to hospital discharge are thought to be a major cause of patient noncompliance with prescribed drug regimens. D'Altroy, Blissenbach, and Lutz (1978) identified five problems they found to be related to drug use. These problems are:

1. Patient noncompliance with prescribed medication regimens after hospital discharge.
2. Prior to hospital discharge, hospital staff members frequently find it difficult to judge patients' capabilities to comply with their medication regimens.
3. Patients often do not use good judgment in managing their regimens due to lack of independence, confidence, or knowledge.

4. Most patients learn how to take their medications at home where they may receive incorrect information and feedback from nonprofessionals.

5. Discharge planning is often conducted too late in the patient's stay to allow them adequate time to learn about their medication regimens and ask questions.

These problems could be corrected by utilizing the home health nurse for post-hospital teaching.

Psychologists have documented that reinforcement is a vital factor in affecting the degree of learning. This implies that the greater the time and effort spent educating patients about their illnesses and medication therapies, the greater the chance they will follow discharge instructions correctly (Romankiewicz, Gotz, Capelli, & Carlin, 1978).

According to Fromer (1983) the home visit can serve as a teaching situation or as a review of teaching done in the hospital. A patient may give every indication of having mastered the techniques of self-care, but in a different environment self-confidence can weaken and lessons can be forgotten. The nurse can assess what is needed and can reinforce prior teaching. When the nurse enters the home, there is an opportunity to determine in what areas of teaching she can be of help. She can also

determine what other agencies or health professionals might be needed and can make the appropriate referrals.

Donabedian and Rosenfeld (1964) conducted a follow-up study of chronically ill patients discharged from the hospital. These researchers reported readmissions to the hospital in about one-fourth of the patients within 1 year after discharge and in one-third of the patients after 2 years of discharge. The problem of repeated hospitalization is clearly a factor to be considered in discharge planning. Governmental agencies and third-party payers have found that effective use of home health nursing is a means of reducing health care costs. Pratt et al. (1957) reported a reduction of readmissions in a group of patients with congestive heart failure through patient education. Through continued care in the home, patients' conditions are managed better and unnecessary readmissions to the hospital are thereby reduced (Beaudry, 1971).

Hanchett and Torrens (1967) conducted a 2 1/2 year study at St. Luke's Hospital Center in New York City to determine if the rate of admission to the hospital for congestive heart failure could be reduced by adding public health nursing follow-up at home to the regular routine outpatient care. The addition of the nursing follow-up

was accompanied by a reduction in the rate of admission to the hospital for congestive heart failure for the study group as compared to the control group. The primary nursing need for the patients receiving public health nursing follow-up was for educational and motivational activities aimed at improving patient adherence to treatment regimens (Hanchett & Torrens, 1967).

Wilber and Barrow (1972) studied hypertensive patients agreeing to accept home visits from a nurse who encouraged them to seek and maintain care, taught them about hypertension and its management, and assessed their progress. The group who accepted the home visits was more compliant.

McDonald (1981) stated education is a major component of a home care program. The goal of patient education is to provide individuals or family members with the knowledge and skills necessary to care for themselves.

Summary

Congestive heart failure is a serious pathological cardiac state which is manifested by cardiorespiratory signs and symptoms. It is present in the chronic state in many elderly people and in those with previously damaged hearts. Management of the patient with chronic congestive heart failure and prevention of acute congestive heart

failure requires very close follow-up and assessment of the patient for early signs and symptoms of congestive heart failure. Active involvement of the patient in the care plan along with education is essential for good management (Duncklee, 1984). Knowledge does not necessarily cause adherence to treatment, but it is a necessary prerequisite in order to assist the patient to assume self-care responsibilities (Sullivan, 1980). The research has shown the home health nurse has a significant impact both on the cost of health care and on the quality of life of these chronically ill patients (McDonald, 1981).

CHAPTER III

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

In this study, elderly congestive heart failure clients' initial knowledge about congestive heart failure was compared to their knowledge levels after a structured teaching program on congestive heart failure. This was a quasi-experimental research study using a one group pretest-posttest design. Polit and Hungler (1978) define a quasi-experimental approach as involving the manipulation of an independent variable but lacking the properties of randomization and control that would have to be present if a true experiment were to be performed. The purpose of quasi-experimental research is to examine differences among conditions before and after intervention (Polit & Hungler, 1978).

The subjects were given a pretest on congestive heart failure to determine their present baseline knowledge level. Intervention then took place in the form of a structured teaching program on congestive heart failure. The information was presented during three home visits in 1 week. Two weeks following the presentation of all teaching material the Congestive Heart Failure Knowledge

Questionnaire was then readministered as the posttest. Differences among pretest and posttest scores were then analyzed. In this study, the independent variable (presumed cause) was the congestive heart failure teaching program. The dependent variable (presumed effect) was the congestive heart failure knowledge level.

Setting

Data were collected through a nonprofit Medicare certified hospital based home health agency in the southwestern United States. The agency makes approximately 500 visits per month, serving approximately 90 clients per month. The teaching program and data collection took place in the subjects' homes.

Population and Sample

The population for this study consisted of all congestive heart failure patients that were receiving Medicare covered skilled nursing visits at home and who volunteered to participate in the study. All subjects were able to read, write, and speak English. To qualify for the study, individuals had to be 65 years old or older, have congestive heart failure diagnosed by their physician, and be a client of the selected home health agency.

The type of sampling used was considered a convenience sample (Polit & Hungler, 1978). It involved the use of the most readily available persons for use as subjects in a study. Twenty-five subjects were used in this study.

Protection of Human Rights

This study was performed in compliance with the current rules and regulations of the Human Subjects Research Review Committee. Federal Guidelines of category I (no risk) of the Federal Report published January 26, 1981, Part X, effective July 27, 1981. Questionnaire research is classified as Category I and review is not required by the Human Subjects Review Committee (Appendix C). Approval for the study and written permission was obtained from the graduate school (Appendix D) and agency (Appendix E) prior to collecting any data.

All volunteer subjects were provided with a written and oral explanation (Appendix F) regarding the study's purpose and methodology. The explanation included instructions for completing the questionnaire, the benefits, and the risks of participating in the study, and the right of subjects to withdraw from the study at any time. Subjects were informed that refusal to participate in the study would not affect their care. The

completion and return of the Congestive Heart Failure Knowledge Questionnaire was construed as the subject's informed consent to participate in this study.

The last five digits of the subject's Medicare numbers was put on the test by the researcher for coding purposes. Confidentiality of the test results were maintained to protect the subjects. The researcher retained all of the questionnaires and reported only group data.

Instrument

The tool used for this study was a researcher-developed test, the Congestive Heart Failure Knowledge Questionnaire (Appendix B), designed to assess the older person's general understanding of congestive heart failure in relation to self-care. The questionnaire was composed of 3 personal information and 13 objective questions. The personal information questions were ascertained from the client's medical record by the researcher. This information verified that the individual met the qualifications for participation in the study. The objective questions evaluated basic comprehension of congestive heart failure, normal function of the heart, common causes of congestive heart failure, diet restrictions, medications, and signs and symptoms of heart

failure. Correct answers to the Congestive Heart Failure Knowledge Questionnaire are shown in Appendix B.

Questionnaire items were formulated from relevant literature which included pamphlets and brochures (American Heart Association, 1982, 1983; Household/Grocery Products Division Alberto-Culver Company, 1984), nursing and medical journal articles (Alpert, 1984; Braunwald, 1981; Duncklee, 1984; Frankl, 1981; Frye, 1981; Klein & Visocan, 1984; Parmley, 1985; Schocken, 1984), nursing textbooks (Brunner, 1980; Luckmann & Sorensen, 1980; Price & Wilson, 1978), and materials for test construction (Tinkelman, 1971; Wesman, 1971).

A three member panel of experts was used to evaluate the test content validity. All three panel members have their doctorates and teach in the nursing graduate department at a major university. The members were asked to evaluate each item on the instrument on the content, relevance, clarity, difficulty, length, and visual appeal. Items which were approved by 2 of the 3 panel members were included in the final questionnaire.

Following approval for content validity, the congestive Heart Failure Knowledge Questionnaire was administered to a group of 50 elderly individuals to

establish reliability. A Cronbach's alpha of 0.532 was obtained.

Data Collection

Approval to conduct this research study was obtained from both the graduate school and from the agency through which the study was conducted. After approval had been obtained, data collection began.

All new patients admitted to the home health agency with the diagnosis of congestive heart failure were given the opportunity to participate in the study during the first home visit. Following the written and oral explanation of the study's methodology, clients were asked if they would like to participate. Participants of the study were then given the pretest (Congestive Heart Failure Knowledge Questionnaire) to read and to answer. The purpose of this test was to evaluate the older person's general understanding of congestive heart failure in relation to self-care.

When subject completed and returned the test, this was construed as informed consent for participation in the study. After the test was returned the structured teaching program on congestive heart failure began. The material covered was presented during 3 scheduled home visits in 1 week. Two weeks following presentation of all

teaching material, a posttest was given and a follow-up letter was sent (Appendix G). The purpose of this test was to evaluate the older person's retention of knowledge of congestive heart failure.

Treatment of Data

Descriptive statistics were used to report the demographic data of the study. The paired t -test was applied to the hypothesis. Researchers use this test when measurements are obtained from the same subjects (Polit & Hungler, 1978). In this hypothesis, the focus was on the change in the knowledge level before and after the congestive heart failure teaching program. For purposes of this study, the level of significance was set at $p = .05$.

CHAPTER IV

ANALYSIS OF DATA

This study was conducted to determine the change in the elderly congestive heart failure client's initial knowledge about congestive heart failure as compared to the knowledge level after receiving a planned teaching program. Each subject's knowledge level was evaluated before and after the teaching program utilizing a researcher-developed test. This chapter represents a description of the sample and an analysis of the data obtained.

Description of the Sample

The total sample consisted of 25 congestive heart failure clients who completed a pretest, received a planned teaching program during three home health visits, and 2 weeks later completed the posttest. All of the subjects were 65 years old or older, had congestive heart failure diagnosed by their physician, and were clients of the selected home health agency. Subjects were able to read, write, and speak English. The ages of the subjects ranged from 65 to 95 years. The mean age was 77 years with a standard deviation of 8.3 years. Table 1 displays the age distribution of the subjects.

Table 1

Sample Distribution by Age

Age range (years)	Number of subjects	Percentage of total
65-70	7	28
71-75	3	12
76-80	5	20
81-85	8	32
86-90	1	4
95-100	1	4

N = 25.

Findings

The highest possible score on the pretest-posttest questionnaire was 21 points. The scores were tabulated according to the number of correct answers. Therefore, the higher an individual's score, the greater his knowledge level about congestive heart failure. No subject obtained a perfect score on the pretest or on the posttest. Nineteen of the subjects showed an improvement in score after the teaching program, while 3 subjects received a lower score on the posttest than they had received on the pretest. Three individuals had no change in their pretest-posttest

scores. The raw scores for both the pretest and the posttest are shown in Appendix H.

The hypothesis stated that there would be a difference in pretest and posttest scores on the Congestive Heart Failure Knowledge Questionnaire for elderly congestive heart failure clients before and after a structured teaching program on congestive heart failure during home visits. The hypothesis was tested using a paired t -test. The t value was equal to 4.229 and the p value was less than .001. By this analysis, the hypothesis was accepted. A significant difference was found between the pretest and posttest scores. The group's test scores improved an average of 3.24 points. Table 2 provides the summary statistics for the pretest and posttest scores.

Table 2

Summary Statistics for Pretest and Posttest Scores

Item	Mean	Range
Pretest	11.60	8-18
Posttest	14.84	10-18
Difference	3.24	

$N = 25.$

Summary of Findings

Twenty-five congestive heart failure subjects, 65 years of age and over, completed the requirements for participation in this study. The statistical analysis led to the acceptance of the hypothesis at less than .001 level of significance. There was a change in the pretest and posttest scores as a result of the congestive heart failure teaching program. The group's test score increased an average of 3.24 points.

CHAPTER V

SUMMARY OF THE STUDY

This research study was conducted to determine if there was significant difference between pretest and posttest scores of elderly congestive heart failure clients who participated in a congestive heart failure teaching program. This chapter summarizes the study and discusses the conclusions, implications, and recommendations for further study.

Summary

The purpose of this study was to determine the difference in elderly congestive heart failure clients' initial knowledge about congestive heart failure compared to their knowledge level after receiving a structured teaching program on congestive heart failure. The theoretical framework was based on Rogers' (1969) learning theory. Elderly congestive heart failure clients should desire to learn about congestive heart failure and improve their self-care because they have the condition. They should have a personal interest in the subject material concerning congestive heart failure.

A quasi-experimental, descriptive approach was used in this study (Polit & Hungler, 1978). A one-group, pretest-posttest design with time interval was used. After being provided with an oral and written explanation of the study, subjects completed the researcher-developed Congestive Heart Failure Knowledge Questionnaire. Completion and return of the questionnaire was construed as informed consent to participate in the study. Intervention took place in the form of a structured teaching program on congestive heart failure. The information was presented during three home visits in 1 week. Two weeks later the subjects were administered the posttest.

Subjects for the study were obtained by convenience sampling from a Medicare certified home health agency. The teaching program, as well as the data collection, took place in the subject's home. The location was a moderate sized metropolitan city in the southwestern part of the United States.

The Congestive Heart Failure Knowledge Questionnaire was a researcher-developed tool which assessed the older person's general understanding of congestive heart failure in relation to self-care. Questions evaluated basic comprehension of congestive heart failure, normal function

of the heart, common causes of congestive heart failure, diet restrictions, and medications. The highest possible score that could be obtained on the test was 21 points.

The text was designed from relevant literature which included pamphlets and brochures (American Heart Association, 1982, 1983; Household/Grocery Products Division of Alberto-Culver Company, 1984), nursing and medical journal articles (Alpert, 1984; Braunwald, 1981; Duncklee, 1984; Frankl, 1981; Frye, 1981; Klein & Visocan, 1984; Parmley, 1985; Schocken, 1984); nursing textbooks (Brunner, 1980; Luckmann & Sorensen, 1980; Price & Wilson, 1978), unpublished thesis (Brnicky, 1981), and materials for test construction (Tinkelman, 1971; Wesman, 1971). A three-member panel of experts was used to evaluate the test content validity. Items which were approved by two of the three panel members were included in the final questionnaire. The test was then administered to a group of 50 elderly individuals. A Cronbach's alpha of 0.532 was obtained.

After data collection was completed, the hypothesis was tested using the paired t -test and it was accepted. A significant difference was found between the pretest and posttest scores.

Discussion of Findings

The findings of this study suggested that patient knowledge levels about congestive heart failure can be increased by a teaching program during home visits. Rosenberg (1971), Marsh and Perlman (1972), and Soflin et al. (1977) also reported similar results. Congestive heart failure patients who received teaching about their condition possessed a better understanding and an increased knowledge level about congestive heart failure. These results are even more significant when they are linked with other studies. For example, Simonds (1967) determined that it is possible to achieve improved adherence to a prescribed regimen and decrease hospital readmissions for congestive heart failure by the use of continuing educational programs. Similarly, Marsh and Perlman (1972) found that a lack of understanding was significantly correlated with failure to take medications and with an increased rate of hospitalization. The present study supports these findings.

The congestive heart failure teaching program in the present study was developed and administered by a registered nurse who worked in home health. Since test scores improved an average of 3.24 points following the presentation of the material, indications are that

learning occurred. Therefore, the present study supports other research studies such as Wilber and Barrow (1972) who found that clients receiving home health instruction from a registered nurse regarding hypertension were more knowledgeable and compliant with their regimen.

Conclusions and Implications

The following conclusions may be drawn based on the findings of the present study:

1. Elderly congestive heart failure clients do not possess an adequate understanding of their condition.
2. Elderly congestive heart failure clients are able to learn about congestive heart failure through a teaching program presented during home visits.
3. The structured teaching program on congestive heart failure is a useful program for patient teaching.

The value of patient education in relation to increasing knowledge levels has been explored. Several implications may be derived from this study. First, the elderly desire to learn and are able to learn. The need for health education by a nurse must be recognized and opportunities provided. Every individual has the right to be informed about his/her personal health and related treatment.

Second, home health nursing is a growing area and the teaching opportunities in this field are numerous. The changes in the Medicare payment system are forcing patients out of the hospital much earlier than in the past. Skilled evaluation and teaching in the home setting are a major part of comprehensive care for these people. Health care professionals have a responsibility to provide this.

Finally, the implication for nursing education is that nurses who are involved in patient teaching may require more information regarding the teaching learning process. Patient teaching is an important aspect of nursing which needs to be stressed both in undergraduate and graduate programs.

Recommendations for Further Study

Recommendations for further study are as follows:

1. The study should be repeated with a longer time interval between the teaching program and the administration of the posttest to determine difference in learning retention.
2. This study should be replicated using a larger group and random sampling.
3. Demographic data should include the subject's educational status so that program effectiveness with

people of varying educational backgrounds could be determined.

4. A follow-up study should be conducted to determine the effect of patient education on compliance with treatment regimens.

5. A study should be conducted to investigate readmission rates for educated home health cardiac patients vs. non-home health cardiac patients.

REFERENCES

- Allendorf, E., & Keegan, H. (1975). Teaching patients about nitroglycerine. American Journal of Nursing, 75(7), 1165-1170.
- Alpert, M. A. (1984). Cardiac failure in the elderly. American Family Physicians, 30(3), 123-138.
- American Heart Association. (1982). Facts about congestive heart failure. New York: Author.
- American Heart Association. (1983). An older person's guide to cardiovascular health. New York: Author.
- Beaudry, L. (1971). Effective discharge planning matches patient need and community resources. Hospital Progress, 52(6), 29-30.
- Braunwald, E. (1981). Heart failure: Pathophysiology and treatment. American Heart Journal, 102(9), 486-490.
- Brunner, L. (1980). The Lippincott manual of nursing practice (3rd ed.). Philadelphia: J. B. Lippincott.
- Brnick, A. B. (1981). A hypertension teaching program for the elderly. Unpublished master's thesis, Texas Woman's University, Denton.
- D'Altroy, L. H., Blissenbach, H. F., & Lutz, D. (1978). Patient drug self-administration improves regimen compliance. Hospitals, 52(21), 131-136.
- Deberry, P., Jeffries, L., & Light, M. (1975). Teaching cardiac patients to manage medications. American Journal of Nursing, 75(12), 2191-2193.
- Donabedian, A., & Rosenfeld, L. (1964). Follow-up study of chronically ill patients discharged from hospital. Journal of Chronic Diseases, 17(9), 847-861.
- Dunklee, J. E. (1984). Protocol: Congestive heart failure. Nurse Practitioner, 9(9), 15-24.
- Frankl, W. S. (1981). Recognition and management of congestive heart failure. Geriatrics, 36(7), 92-102.

- Fromer, M. J. (1983). Community health care and the nursing process. St. Louis: C. V. Mosby.
- Frye, R. L. (1981). Chronic congestive heart failure: Eight steps in management. Postgraduate Medicine, 69(3), 165-174.
- Galton, L. (1976). Drugs and the elderly: What you should know about them. Nursing '76, 6(8), 39-43.
- Graham, L. E. (1969). Patients' perceptions in the C.C.U. American Journal of Nursing, 69(9), 1921-1922.
- Hanchett, E. S., & Torrens, P. R. (1967). A public home health nursing program for outpatients with heart disease. Public Health Reports, 32(8), 683-688.
- Hecht, A. B. (1974). Improving medication compliance by teaching outpatients. Nursing Forum, 13(2), 113-129.
- Household/Grocery Products Division of Alberto-Culver Company. (1984). Taming the taste for salt from Mrs. Dash. Melrose Park, IL: Author.
- Kirscht, J. P., & Rosenstock, I. M. (1977). Patient adherence to antihypertensive medical regimens. Journal of Community Health, 3(2), 115-124.
- Klein, L. W., & Visocan, B. J. (1984). The role of restriction of sodium intake in the treatment of heart failure in the elderly. Journal of the American Geriatrics Society, 32(5), 353-355.
- Lewis, K. B. (1976). Heart disease in the elderly. Hospital Practice, 11(2), 99-106.
- Luckmann, J., & Sorensen, K. (1980). Medical-surgical nursing: A psychophysiologic approach (2nd ed.). Philadelphia: W. B. Saunders.
- Marks, J., & Clarke, M. (1978). The hospital patient and his knowledge of the drugs he is receiving. International Nursing Review, 19(1), 39-50.
- Marsh, W. W., & Perlman, L. V. (1972). Understanding congestive heart failure and self-administration of digoxin. Geriatrics, 27 (7), 65-70.

- Mazzulo, J. M., & Lasagna, L. (1972). Take thou . . . but is your patient really taking what you prescribed? Drug Therapy, 2(2), 11-15.
- McDonald, O. J. (1981). A home care program for patients with chronic lung disease. Nursing Clinics of North America, 16(2), 259-273.
- McKee, P. A., Castelli, W. P., McNamara, P. M., & Kannel, W. B. (1971). The natural history of congestive heart failure: The Framingham study. New England Journal of Medicine, 285(26), 1441-1446.
- McKenney, J. M., Slining, J. M., Henderson, H. R., Devins, D., & Barr, M. (1973). The effect of clinical pharmacy services on patients with essential hypertension. Circulation, 48(11), 1104-1111.
- Morgan, D. M. (1976). Post-coronary care in the community. Dimensions in Health Services, 53(1), 27-30.
- Neely, E., & Patrick, M. L. (1968). Problems of aged persons taking medications at home. Nursing Research, 17(1), 52-55.
- Parmley, W. W. (1985). Pathophysiology of congestive heart failure. American Journal of Cardiology, 55(1), 9A-14A.
- Podell, R. N., & Gary, L. R. (1976). Compliance: A problem in medical management. American Family Physician, 13(4), 74-80.
- Polit, D. F., & Hungler, B. P. (1978). Nursing research: Principles and methods. Philadelphia: J. B. Lippincott.
- Pratt, L., Seligman, A., & Reader, G. (1957). Physicians' views on the level of medical information among patients. American Journal of Public Health, 47(10), 1277-1283.
- Price, S. A., & Wilson, L. M. (1978). Pathophysiology: Clinical concepts of disease. New York: McGraw-Hill.
- Rahe, R., Scalz, C., & Shine, K. (1975). A teaching evaluation questionnaire for post myocardial infarction patients. Heart and Lung, 4(5), 759-766.

- Rocella, E. J. (1976). Potential for reducing health care costs by public and patient education. Public Health Reports, 91(3), 223-225.
- Rogers, C. R. (1951). Client-centered therapy. Boston: Houghton-Mifflin.
- Rogers, C. R. (1961). On becoming a person. Boston: Houghton-Mifflin.
- Rogers, C. R. (1969). Freedom to learn. Columbus, OH: Charles E. Merrill.
- Rogers, C. R. (1977). On personal power. New York: Delacorte.
- Romankiewicz, J. A., Gotz, V., Capelli, A., & Carlin, H. S. (1978). To improve patient adherence to drug regimens -- an interdisciplinary approach. American Journal of Nursing, 78(7), 1216-1219.
- Rosenberg, S. G. (1971). Patient education leads to better care for heart patients. Health Services and Mental Health Administration, 86(9), 793-802.
- Royle, J. (1973). Coronary patients and their families receive incomplete care. The Canadian Nurse, 69(2), 21-25.
- Sackett, D. L., Gibson, E. S., Taylor, D. W., Haynes, R. B., Hackett, B. C. Robert, R. S., & Johnson, A. L. (1975). Randomized clinical trial of strategies for improving medication compliance in primary hypertension. Lancet, 1(7918), 1205-1207.
- Schocken, D. D. (1984). Congestive heart failure: Dx and Rx in the elderly. Geriatrics, 39(11), 77-88.
- Simonds, S. K. (1967). The educational care of patients with congestive heart failure. Health Education Journal, 25(8), 131-141.
- Smith, W. M. (1985). Epidemiology of congestive heart failure. American Journal of Cardiology, 55(1), 3A-8A.

- Soflin, D., Young, W. W., & Clayton, B. D. (1977). Development and evaluation of an individualized patient education program about digoxin. American Journal of Hospital Pharmacy, 34(4), 367-371.
- Stewart, R. B., & Cluff, L. E. (1972). A review of medication errors and compliance in ambulant patients. Clinical Pharmacology and Therapeutics, 13(4), 463-468.
- Sullivan, T. (1980). Self-care model for nursing. New directions for nursing in the 80's. New York: American Nurses' Association Publication No. G-147.
- Tagliacozzo, D. M., & Ima, K. (1970). Knowledge of illness as a predictor of patient behavior. Journal of Chronic Disease, 22(11), 765-775.
- Tinkelman, S. N. (1971). Planning the objective test. In R. L. Thorndike (Ed.), Educational measurement (pp. 68-78). Washington, DC: American Council on Education.
- Weber, K. T. (1982). New hope for the failing heart. American Journal of Medicine, 72(4), 665-671.
- Weber, K. T., Likoff, M. J., Janicki, J. S., & Andrews, V. (1984). Advances in the evaluation and management of chronic cardiac failure. Chest, 85(2), 253-259.
- Weinberg, S. (1974). Patient education as a part of critical care. Heart and Lung, 3(1), 47-48.
- Wenger, N. (1975). Patient and family education after myocardial infarction. Postgraduate Medicine, 57(6), 129-134.
- Wesman, A. G. (1971). Writing the test item. In R. L. Thorndike (Ed.), Educational measurement (pp. 97-105). Washington, DC: American Council on Education.
- Wilber, J. A., & Barrow, J. G. (1972). Hypertension: A community problem. The American Journal of Medicine, 52(4), 653-663.

APPENDIX A
Teaching Program

A Structured Teaching Program on Congestive Heart Failure (CHF)

Learner Objectives	Teaching Content	Teaching Methods
1. The learner will have a basic understanding of the anatomy and physiology of congestive heart failure.	I. Normal Function of the Heart	One on one instruction. Discussion handout.
	II. Causes of CHF A. Narrowing or coronary arteries B. Past heart attack C. High blood pressure D. Heart valve disease E. Cardiomyopathy F. Congenital birth defects G. Infection of heart valves or muscle	
	III. Mechanics of CHF A. Inefficient pumping of heart 1. Reduced strength of muscle contraction 2. Limited ability of the heart chambers to fill with blood 3. Overfilling of the pumping chambers during their contraction B. Blood back up in vessels causing fluid to be forced out	

Learner Objectives	Teaching Content	Teaching Methods
	1. Into the tissues 2. Into the lungs C. Circulating volume decreased D. Kidneys unable to dispose of sodium and water	
	IV. Signs and Symptoms of CHF A. Shortness of breath B. Edema C. Weight gain D. Persistent cough E. Tiredness F. Nocturia	
2. The learner will be able to discuss various methods of treatment for congestive heart failure	I. Medication A. Digoxin 1. action 2. side effects 3. pulse B. Lasix (diuretics) 1. action 2. side effects 3. weight C. Vasodilators 1. action 2. side effects	One on one instruction. Discussion handouts

Learner Objectives	Teaching Content	Teaching Methods
	II. Diet--low sodium A. Explain relationship between sodium and fluid retention B. Explain relationship between fluid retention and congestive heart failure C. Foods to avoid D. Examples of diet E. Seasoning ideas III. Activity Program A. Explain relationship of activity and workload for heart B. Increase activity gradually provided it is tolerated C. Avoid extremes in environmental temperatures	

APPENDIX B
Questionnaire

This face sheet to be attached to the Congestive Heart Failure Knowledge
Questionnaire following completion:

Information ascertained from medical record:

Age _____

Last 5 digits of medicare number _____

Congestive heart failure diagnosed by a physician? ___yes ___no

**COMPLETION AND RETURN OF THIS QUESTIONNAIRE WILL BE CONSTRUED AS
YOUR INFORMED CONSENT TO ACT AS A SUBJECT IN THIS STUDY**

Congestive Heart Failure Knowledge Questionnaire

1. CIRCLE THE ONE STATEMENT WHICH IS TRUE ABOUT CONGESTIVE HEART FAILURE.
 - A. Congestive heart failure means that the heart stops beating.
 - B. Congestive heart failure indicates that the pumping action of the heart is impaired.
 - C. Congestive heart failure is the same thing as a heart attack.
2. CIRCLE THE ITEM BELOW WHICH IS NOT TRUE ABOUT THE NORMAL FUNCTION OF THE HEART.
 - A. It moves blood through the body to provide nutrients.
 - B. It is the main site for manufacturing of insulin.
 - C. It aids in the removal of waste material by circulating blood.
3. CIRCLE THE ITEMS BELOW WHICH ARE COMMON CAUSES OF CONGESTIVE HEART FAILURE (MORE THAN ONE ANSWER IS CORRECT).
 - A. Narrowing of the arteries supplying blood to the heart muscle.
 - B. Past heart attack with scar formation large enough to interfere with the normal working muscle.
 - C. Heart valve disease due to past rheumatic fever or an abnormality present since birth.
 - D. Iron deficiency anemia
 - E. High blood pressure

4. CIRCLE ONE ANSWER.
THE PURPOSE OF A LOW SALT DIET IS TO:
- A. Control the amount of cholesterol, fat, and calories that a person eats.
 - B. Control the amount of salt in the body tissues that aids in the loss of water from the body.
 - C. Reduce the amount of carbohydrates, protein, and fat that a person eats.
 - D. Regulate the balance of other vitamins and minerals in the body.
5. CIRCLE ONE ANSWER ONLY.
DIURETICS (WATER PILLS) HELP CONTROL CONGESTIVE HEART FAILURE BECAUSE THEY:
- A. Help the heart beat more effectively.
 - B. Allow the body to keep extra water which dilutes the salt concentration in the body.
 - C. Cause the body to get rid of excess salt and water which in turn reduces the blood volume.
 - D. Allow the body to keep extra water if the body needs it, or get rid of the water if it is not needed.
6. CIRCLE ONE ANSWER ONLY.
DIURETICS (WATER PILLS) HAVE A TENDENCY TO DECREASE THE BODY'S SUPPLY OF WHAT MINERAL?
- A. Iron
 - B. Chloride
 - C. Calcium
 - D. Potassium
7. CIRCLE ONE ANSWER ONLY.
DIGOXIN (LANOXIN, HEART PILLS) HELPS CONTROL CONGESTIVE HEART FAILURE BECAUSE IT:
- A. Gets rid of excess fluid and salt.
 - B. Lowers blood pressure.

C. Helps the heart beat more effectively.

D. Relieves chest pain.

IN EACH OF THE CATEGORIES BELOW, CIRCLE THE ONE FOOD THAT WOULD NEED TO BE RESTRICTED ON A MILD SALT RESTRICTED DIET. ASSUME THAT THE COOKED FOODS WOULD BE PREPARED WITHOUT SALT.

8. A. Oranges

B. Rice

C. Canned soup

D. Apples

E. Honey

9. A. Broccoli

B. Sauerkraut

C. Lemon juice

D. Pure maple syrup

E. Cucumber

10. A. Carrots

B. Vinegar

C. Bologna

D. Potatoes

E. Lettuce

11. A. Cauliflower

B. Dill pickles

C. Chewing gum

D. Banana

E. Onion

12. CIRCLE THE ITEMS BELOW WHICH ARE SIGNS AND SYMPTOMS OF CONGESTIVE HEART FAILURE. (MORE THAN ONE ANSWER IS CORRECT).

A. Gain weight

B. Swelling of ankles, feet, or abdomen

C. Diarrhea

D. Tiredness

E. Nose bleed

F. Shortness of breath

G. Persistent cough

- H. Muscle cramps
 - I. Frequent urination at night
 - J. Ringing in ears
 - K. Headache
13. CIRCLE THE ITEM BELOW WHICH IS NOT A SYMPTOM OF DIGITALIS TOXICITY:
- A. Unexplained loss of appetite
 - B. Nausea, vomiting
 - C. Diarrhea
 - D. Blurred or flickering vision, yellow or green vision or seeing spots or halos around objects
 - E. Constipation
 - F. Slowing of heart rate

Congestive Heart Failure Knowledge Questionnaire

Correct Answers - Key

1. B
2. B
3. A, B, C, E
4. B
5. C
6. D
7. C
8. C
9. B
10. C
11. B
12. A, B, D, F, G, I
13. E

APPENDIX C

Research Review Committee Approval

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

PROSPECTUS FOR THESIS/DISSERTATION/PROFESSIONAL PAPER

This prospectus proposed by: Mary Augustine Kelly
_____ and entitled:

A STRUCTURED TEACHING PROGRAM ON CONGESTIVE HEART FAILURE FOR
ELDERLY CLIENTS' KNOWLEDGE LEVEL

Has been read and approved by the member of (~~his~~/hers)
Research Committee.

This research is (check one):

xx Is exempt from Human Subjects Review Committee
review because this research study poses no risk to the sub-
jects and qualifies under Category I research according to the
Health and Human Services Federal Guidelines

_____ Requires Human Subjects Review Committee review
because _____

Research Committee:

Chairperson, Susan Goad

Member, Jane Watson

Member, Jandra Brinkland

Date: Oct. 1, 1985

Dallas Campus xx Denton Campus _____ Houston Campus _____

APPENDIX D

Approval Letter from Graduate School



Texas Woman's University

P.O. Box 22479, Denton, Texas 76204 (817) 383-2302, Metro 434-1757, Tex-An 834-2133

THE GRADUATE SCHOOL

November 4, 1985

Ms. Mary Kelly
6822 Glendora
Dallas, Texas 75230

Dear Ms. Kelly:

I have received and approved the Prospectus for your research project. Best wishes to you in the research and writing of your project.

Sincerely yours,

Leslie M. Thompson
Leslie M. Thompson
Provost

tb

cc Dr. Susan Goad
Dr. Anne Gudmundsen

APPENDIX E
Agency Permission

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE Home Health-Home Care/Deaconess Home Health

GRANTS TO Mary Augustine Kelly
a student enrolled in a program of nursing leading to a
Master's Degree at Texas Woman's University, the privilege
of its facilities in order to study the following
problem.

A STRUCTURED TEACHING PROGRAM ON CONGESTIVE HEART FAILURE FOR
ELDERLY CLIENTS' KNOWLEDGE LEVEL

The conditions mutually agreed upon are as follows:

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

October 2, 1985
Date

Signature of Agency Personnel

Mary Augustine Kelly
Signature of Student

Dr. Susan Goad
Signature of Faculty Advisor

*Fill out & sign 3 copies to be distributed: Original-student; 1st copy-Agency; 2nd copy-TWU School of Nursing

APPENDIX F

Oral Explanation of the Study

Oral Explanation of the Study

My name is Mary Kelly and I am a graduate nursing student at Texas Woman's University. I am conducting research about knowledge regarding congestive heart failure.

This is a questionnaire which will evaluate your current knowledge about congestive heart failure and compare it to your knowledge after receiving a teaching program during home nursing visits. You have the right to decide if you would like to participate. Your care will not be affected if you choose not to participate in the study.

I do not want you to write your name on the questionnaire. Your name will not be connected with the questionnaire or any personal information you give.

Next, you will be asked to complete a short multiple choice questionnaire on congestive heart failure. You are not expected to know all the answers. Please circle the answers you think are right. You will have as much time as you need to finish the questionnaire, but it is estimated that it will take 15-20 minutes.

Thank you,

Mary Kelly, R.N.

APPENDIX G

Follow-up Letter to Subjects

Follow-up Letter to Subjects

A few weeks ago you completed a questionnaire about congestive heart failure. Following this you participated in a teaching program on congestive heart failure during three home visits.

Would you please help me finalize the research by completing the enclosed questionnaire. DO NOT SIGN this questionnaire! Your answers are confidential and will be used in combination with the results of all other questionnaires.

Thank you,

Mary Kelly, R.N.

APPENDIX H

Raw Data

Tabulation of Raw Data*

Subject	Pretest Score	Posttest Score	Difference
1	10	14	+4
2	11	15	+4
3	12	16	+4
4	8	18	+10
5	8	17	+9
6	14	17	+3
7	13	17	+4
8	15	16	+1
9	14	14	0
10	15	14	-1
11	9	11	+2
12	5	16	+11
13	12	16	+4
14	9	14	+5
15	13	15	+2
16	6	12	+6
17	8	15	+7
18	13	17	+4
19	14	16	+2
20	11	14	+3
21	16	17	+1
22	18	13	-5
23	11	11	0
24	16	16	0
25	12	10	-2

*Number correct out of 21 possible test items.