

LEARNING NEEDS OF CARDIAC PATIENTS

BY BAHRAINI NURSES AND PATIENTS

BY

NASRAT ABDULRASOOL ESBAL
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I hereby recommend that the thesis prepared under my supervision by

NASRAT ABDULRASOOL ESBAL

entitled LEARNING NEEDS OF CARDIAC PATIENTS BY BAHRAINI NURSES AND
PATIENTS

be accepted in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE IN NURSING SCIENCES

Regina J. Powers

In Charge of Thesis

Recommendation concurred in

Regina J. Powers
Robert L. Jackson
Ralph Holm
Debra P. [unclear]

Committee

on

Final Examination



This thesis is dedicated to my parents for their love and faith in
me.

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LIST OF ABBREVIATIONS

CCU	cardiac care unit
CPLNI	Cardiac Patient's Learning Needs Inventory
CPR	cardiopulmonary resuscitation
IV	intravenous
MI	myocardial infarction

SUMMARY

The purpose of this study was to explore cardiac patients' and nurses' perceptions of the importance of cardiac informational topics that concern patients from Bahrain. In addition, Bahraini males and females who had had a myocardial infarction were compared in regard to their perceptions of cardiac diseases. These results were compared with Gerard and Peterson's (1984) analysis which was done on American patients and nurses. Sixty Bahraini patients and fourteen Bahraini nurses were interviewed. All patients had experienced a myocardial infarction and all the nurses worked in the coronary care unit (CCU) of the Salmaniya Medical Center and had cared for these patients.

The Cardiac Patient's Learning Needs Inventory (CPLNI) was developed by Gerard and Peterson (1984). It contains a list of 43 informational items commonly taught to cardiac patients. The CPLNI scale was translated into Arabic for use with the Bahraini patients. The patients and nurses rated the items according to the degree of importance the items had for cardiac patients. Significant differences were found between patients and nurses. Using Spearman's rank-order correlation, the investigator found a correlation of $r = .274$ between the patients' and nurses' ranking of the items on the CPLNI scale. There was closer agreement between the male and female patients as indicated by a correlation of $r = .944$. Bahraini patients two items as being equally most important: decreasing chances of having another heart attack and where their family can go to learn cardiopulmonary resuscitation (CPR). The

SUMMARY (continued)

nurses ranked knowing why the patient was in the CCU as the most important item for a patient to know and what the patient should do if she or he has chest pain as the second most important. The patients and nurses gave similar ratings to reasons for having intravenous (IV) tubes, coronary care unit (CCU) routines, counting pulse, and seeking medical help.

I. INTRODUCTION

A. Introduction to the problem

While patient education is an important part of health care in the United States of America, in Bahrain there are no established patient teaching programs for patients recovering from serious illness. Before patient teaching programs can be successfully undertaken in Bahrain, the learning needs of Bahraini patients must be assessed.

Based upon personal experience as a nurse in Bahrain, I have noted that patients are becoming more aware of health needs and the need for more information about the illness process. In addition, patients are beginning to question the delivery of health care and how it affects their recovery from illness.

A major area of concern in the demand for patient education is related to the increase in the number of patients in Bahrain having myocardial infarction (MI). It has been reported that between the years of 1981 and 1985, 1,714 patients have been admitted to the Coronary Care Unit (CCU) with MI, and 137 of those admitted died (personal communication from Salmaniya Medical Center, 1986). Because of the increase of patients with MI in Bahrain, there is an increasing demand on nurses to teach patients and their families about the illness and recovery process. However, before teaching programs are undertaken on a large scale, more accurate information is needed regarding the learning needs of patients.

Since Dodge (1969) reported that "a person's desire for information forms a potent variable in determining what information he will receive and how he will interpret it" (p. 502), it is important for nurses to influence the patient's desire for knowledge about his illness by presenting information relevant to the patient's needs. Dodge added,

Understanding is facilitated when an individual receives the kind of information that he feels he needs in a particular situation. Conversely, communication is impaired when an individual regards a particular message as not sufficiently important to attend to, or even worse, when he rejects it. (p. 503)

It is imperative that the information conveyed to patients by nurses be accurate and relevant to the patient's situation. Moreover, research suggests that the more a patient knows about his condition, the more likely he is to cooperate successfully in his treatment.

Haferkorn (1971) supports this notion:

Patients suffering from the crisis of an acute illness face changes in their lifestyle with which they must learn to cope. Knowledge of the disease and its therapy is an essential factor in adequate adaptation to an illness which may permanently alter the patient's pattern of living. Lack of knowledge can be deleterious to recovery since the patient is unable to protect his health and may unknowingly do himself harm. (p. 199)

It has been reported in literature referring to American nurses that patient teaching is considered an essential part of care (Harper, 1976; Palm, 1971). It is assumed that patient teaching is an important component of care rendered by nurses in Bahrain. However, there are no studies reported on what nurses judge to be essential information on patient teaching. Moreover, there is a lack of information regarding what information patients themselves view as important.

Since the number of patients in Bahrain experiencing MI is on the increase, it is important to identify patients' informational needs in order to formalize patient education programs. Therefore, the purpose of this study is to compare the perceptions of nurses and patients regarding the learning needs of patients recovering from MI. This study replicates the work of Gerard and Peterson (1984) on the perception of American patients recovering from MI.

B. Research questions

The following questions were explored:

1. What perceptions do Bahraini cardiac disease patients have regarding their learning needs post myocardial infarction?
2. What perceptions do nurses working in coronary care units in Bahraini hospitals have about the cardiac patient's learning needs?
3. What differences are there in the learning needs of male and female Bahraini patients with cardiac disease?
4. Is there a relationship between the patients' demographic variables, such as age, sex, educational level and work status, and their perception of their learning needs?

II. LITERATURE REVIEW

A. Introduction

In Bahrain there are no established teaching programs for patients recovering from myocardial infarction (MI). However, there is an increase in the prevalence of acute MI in Bahrain. Bahraini patients are becoming more aware of health needs, and they need more information about their illness process. They are beginning to question the quality of health care and its effect on their recovery from illness.

This literature review compares nurses' and patients' perceptions of the learning needs of MI patients. It also reviews the literature on cardiac patient education, rehabilitation, and the nurses' role in patient education and in helping patients cope with their illness.

B. Comparison of nurses' and patients' perceptions of patients' learning needs

The existing literature indicates very few studies have been done on the comparison of nurse-patient perception of learning needs for cardiac disease. Literature pertaining to related areas was reviewed and is included in this literature review.

Gerard and Peterson (1984) studied the learning needs of cardiac patients as perceived by patients and nurses using a questionnaire called the Cardiac Patient Learning Need Inventory (CPLNI). It contained 43 informational items, the educator preference tool, and an interview. There were 15 patients and 20 nurses who participated in the study. The results showed that nurses ranked the category of medication higher than

the patients ranked it. A significant difference between nurses and patients was "how to tell when activity could be increased." The result of Gerard and Peterson's (1984) study suggested that patients' and nurses' perceptions of the learning needs of cardiac patients are congruent. Patients viewed nurses as legitimate authorities for teaching all categories of information.

Lauer et al. (1982) compared the nurses' and patients' perceptions of the learning needs of cancer patients. Responding to a questionnaire and an interview, 33 nurses and 27 patients rated the degree of importance of learning 36 informational items. The authors found that significant differences existed between nurses' and patients' perceptions of learning needs of cancer patients. In this study, nurses ranked the importance of learning the purpose of chemotherapy relatively low, while patients ranked it high. Nurses considered knowledge of the side effects from chemotherapy a high priority, whereas the patients ranked it low. Nurses identified "dealing with feelings" as the most problematic area for patients, while patients ranked this area low.

Godard and Powers (1982) used a rating scale and interviews with 24 patients and 9 nurses to examine nurses' and patients' perceptions regarding the educational needs of hemodialysis patients. The results indicated significant differences between the groups in their perceptions of patients' educational needs. Also, significant conflict in interpersonal communication with the nurse-patient dyads was identified. The authors suggested that conflicts in interpersonal communications may interfere with effective patient teaching.

Duncan et al. (1973) evaluated a post-MI teaching program by interviewing patients with heart disease--e.g., angina pectoris, congestive heart failure--and cardiac surgical patients upon admission to the wards. The program attempted to help diminish the high level of anxiety. Patients expressed pleasure in the opportunity to review and ask questions. They believed that they were helped in understanding their disease and were thus able to follow their physician's instructions better.

Owens and Hutelmyer (1978) investigated the effectiveness of health teaching among 36 hospitalized cardiac patients. The educational program consisted of 45-minute discussion sessions on anatomy and physiology, dietary management, appropriate activity programs, the adjustment process, risk factors, and signs and symptoms of complications from therapy. Patients were given a pre- and posttest and were interviewed 6 weeks after discharge. The results showed an increase in patients' knowledge and compliance.

Horlick et al. (1984) studied the effect of education on 83 MI patients who were followed up and given an educational program. It included information on risk factors, coronary artery disease, nutrition, exercise, and smoking. This program component lasted 30-45 minutes, and the whole program lasted 6 weeks. The researchers used the Minnesota Multiphasic Personality Inventory to assess patients' needs. Both the patients and the physicians confirmed that the majority of patients stated their health was good following MI and that the patients had learned a lot from their rehabilitation program.

C. Nurses' role in patient education

Baden (1972) stated that "Patient teaching is a professional responsibility of nurses" (p. 563). Nurses are the best persons to teach the patients because they are the ones who spend the most time caring for the patients. Many MI patients have difficulty returning to normal life because they suffer from emotional factors, so nurses can play an important role in identifying the emotional factors and feelings that patients go through while in the hospital and after they return home. For example, nurses can identify stress-provoking situations; help patients learn to live within the limitations imposed upon them by their heart condition; help them understand the pertinent facts about their heart condition; help them assess their capabilities so they can arrange their lives to meet their needs; help alleviate their fears and anxieties about their illness. Nurses strengthen patients' self-image by reinforcing their feelings of effectiveness and competence. Lastly, nurses can help the patients overcome all the above problems.

Baden (1972) also suggested that physicians and nurses can both cooperate in teaching patients, starting in the CCU while the patient is being cared for in the acute stage of illness. Winslow (1976) stated that "Patient education is the responsibility of every member of the professional health team" (p. 563). Nurses are the most appropriate health personnel to provide patient education because they are with the patient 24 hours a day and know the patient's diagnosis, treatment, and prognosis. Nurses can play an important role and can be effective in meeting these educational needs through interviewing and counseling

patients and their spouses. Nurses would be able to identify their major concerns and assess their learning readiness. They can teach patients about exercise, driving, problems encountered during exercise, sexual activity, diet, medication, and recreational activity.

Pozen and Fried (1977) wanted to learn how effective nurses can be with, and what impact they have on, MI patients. Using a questionnaire and interview, they surveyed 102 patients to evaluate the effect of a CCU-based nurse rehabilitator as an adjunct for the CCU physician and nurse. The results indicated that the nurse rehabilitator was effective in improving the patients' rate of return to work and decreasing the patients' anxiety. "The reason was related to personal and environment factors . . ." (p. 836). Nurses in the study played an important role by being patient advocates. Their counseling, which included family and group interactions, seemed to account in part for the positive results. Nurses increased patients' knowledge, resulting in a reduction of cigarette smoking. They expressed concern and interest in the patients independent of their educational, counseling, and rehabilitation roles.

Patient education is the most commonly agreed upon independent function of nursing; it may be nursing's most important function. A thorough knowledge and understanding of the disease and therapy can help patients in accepting necessary changes in lifestyle. A nurse has the right and duty to provide the information a patient needs to maximize chances of recovery and restoration of health (Baden, 1972). A patient who has suffered from MI usually feels a threat to his self-image. As the initial pain and discomfort subside, the patient begins to realize

he is not "omnipotent" and becomes frightened at the prospect of losing his independence. Yet many of these patients do not know what to ask or how to ask for information.

D. Content of patient education

Rahe et al. (1975) evaluated a post-teaching program by interviewing 24 patients before and after they received the teaching program. In the study, patients were first interviewed, then given a booklet, and then attended nurse-led sessions on cardiac disease. Family members were encouraged to attend these sessions, too. The results of the study showed that the highest ranked item was on emergency care and the lowest ranked items were on returning to home and work; physical activity came in second. The authors concluded that the program increased patients' knowledge concerning emergency treatment, diet, smoking, and physical activity. It also increased patients' knowledge about problems surrounding their return to home and work.

Using a questionnaire, Kelsey and Beamer (1973) surveyed 12 members of post-hospital community health clubs for patients with MI. The results of their survey indicated that subjects were interested in learning as much as they could, especially about their diet, weight, smoking, drinking, family living, drugs and their side effects, sexual activity, anatomy, surgery, and stress.

Rosenberg (1971) used a structured interview to study the effect of a multidisciplinary educational approach on 50 patients with congestive heart failure. Information about knowledge of medications, diet, and the disease process were obtained. The interviews were repeated after 6

months to determine knowledge and attitudinal changes. Among the significant differences noted were that patients stayed significantly more days in the hospital before the study; there was an increase between the first and second interviews in the patient's knowledge of food restrictions concerning lowered sodium intake; knowledge about, and ability to identify, medications increased; and there was a significant difference in patient's admissions to a hospital---that is, 23 patients had been admitted to a hospital 35 times with congestive heart failure, but only 6 patients were readmitted 12 times for congestive heart failure.

Wenger (1975) stated that "a program of public education is the ideal approach to provision of coronary atherosclerotic heart disease." Wenger wrote that it is important to recognize the warning signs of a heart attack and that these signs should be taught to patients appropriately in order to prevent heart attacks. However, healthy individuals are not as motivated to learn about "provision and management" of disease as patients with the illness, so it the primary physician's responsibility to institute an educational program for patients and their families. A rehabilitation program should provide sufficient information about the disease and its management to enable patients to assume some responsibility. Thus, the role of the educational program is to provide patients with information that is realistic and measures patients' concerns regarding family role, sex, recreation, and job.

Wenger (1975) included the following in her rehabilitation program: a basic concept of normal heart function so the patient can understand how MI alters a person; without this information patients have

difficulty understanding how obstruction of a coronary artery causes the pain a patient experiences and how the disturbance of cardiac rhythm and impaired pumping function can produce symptoms. MI patients have to be taught about altering their lifestyles: 1) dietary alterations to change calories, fat, and sodium; 2) physical activity will initially be restricted and then gradually increased; and 3) smoking should be given up. Other important information would include risk factors, modification, and control of associated diseases (e.g., diabetes and hypertension). When medication is given to the patient, its name, purpose, dosage, and any side effects should be explained.

Regarding the timing of patient education, it must be kept in mind that during the acute MI stage, the patient is under pressure, so only simple information can be transmitted. But during recovery, patients need detailed information; this is the time when nurses play an important role in teaching the patient. Continuity of the program is very important for the patient and the family because of the long-term process. When compared to the pretest level of understanding, the increase in knowledge was not significant. The continuity of the program is very important because patient and family education must be a long-term process. The format of the learning progression should be standardized so that learning begins initially in the CCU and then continues during the remainder of the hospital stay. This should also be correlated with the long-term care provided in the hospital clinic or industrial medical facility.

Researchers have studied patient education as it attempted to assist patients who have experienced MI to return to a normal lifestyle that will affect their prognosis and prevent recurrence of MI. This need is important for Bahraini MI patients. Bahraini nurses claim that patient education will help patients to change their behavior by modifying risk factors—for example, smoking, dietary habits, and excess body weight--and developing healthier individuals by keeping them physically fit.

In this teaching program it is hoped that patients will be given all the information necessary to continue once they have left the hospital environment. Kelsey and Beamer (1973) noted that the patient is managed extremely well in the acute phase of MI, but after discharge the patient is left with very little resources such as professional help and counseling. It is important to continue the education of patients and to involve their family members in learning more about their common problem.

In summary, it is important to educate the patient and the family about the best approach to the prevention of heart disease in order for them to detect and recognize heart disease, including the early signs of heart attack. It is also important to help increase the patient's self-confidence and enhance the patient's ability to cope with illness.

III. METHODOLOGY

A. Introduction

This was an exploratory study designed to compare cardiac patients' and nurses' perceptions of the learning needs of patients who had experienced MI. The investigator used the Cardiac Patient Learning Need Inventory (CPLNI) developed by Gerard and Peterson (1984). This chapter presents a description of the setting, selection criteria and sample, instrumentation, ethical considerations, and procedure.

B. Research site

The research study was conducted during the month of August in 1986 at a large medical center-hospital in Bahrain. The hospital is a major referral center; all cardiac patients who have experienced MI are evaluated in the medical clinic at that medical center. The patients in this study were interviewed after they had been discharged from the hospital and had returned to the medical clinic 6 weeks later for follow-up; patient interviews occurred during these clinic visits. The coronary care nurses were interviewed in a private room in the coronary care unit of the medical center.

C. Selection criteria and sample

1. Patients

a. Eligibility

To be eligible for this study, patients had to be diagnosed as having had a myocardial infarction, be in their first month of recovery, and not yet have returned to work. Sixty patients met these

criteria during the one-month data collection period. The subjects were all Bahraini and spoke Arabic.

b. Sociodemographic description

There were 44 males and 16 females. All but two of the patients were married, and most had children. Their ages ranged from 24 to 75 years, with a mean of 53.8 years and a standard deviation of 11.24 years. Their employment included the following occupations: dentistry, director, sales manager, engineer, shopkeeper, tailor, painter, house builder, policeman, watchman, taxi driver, fisherman, and retired pearl diver. Only one female patient was employed; she worked as an elementary school teacher.

Educationally, they ranged from having no education at all through completion of college and university degrees. There were 43 who had no education, 9 who had a primary education, 5 who had college degrees, and 2 who had university degrees. One woman was educated at the secondary level; the rest had no formal education.

c. Health education experience

Only two patients had been involved in any type of health education. One patient, a member of the dental faculty of the university, was involved with the development of educational materials for dental patients. The other patient had viewed a film as part of the safety program at his work site. None of the patients had received formal instruction regarding their illness, and most of their information was from their physician on an individual basis. Most of the patients

reported receiving very little information from nurses although they stated clearly that they were very pleased with their CCU care.

2. Nurses

Of the 15 nurses who worked in the CCU, 14 actually participated in the study, and 1 declined to participate without any stated reason. Of the 14, 12 were female and 2 were male. They ranged in age from 22 to 38 years, with a mean of 30 years and standard deviation of 3.98 years.

One nurse had an associate's degree, eight were graduates of diploma programs, and five were baccalaureate prepared. They had a mean of 7.7 years of total nursing experience. Their time as coronary care nurses ranged from 1 to 9 years, with a mean of 5.2 years. Nine of the nurses routinely read articles on patient education in the past 6 weeks, and six of the nurses had received in-service education about cardiac patients.

D. Instrumentation

The Cardiac Patient Learning Inventory (Appendix A), developed by Gerard and Peterson (1984), was used to collect the data. The CPLNI scale is a 5-point Likert scale containing a series of informational items drawn from a review of literature recommending what information should be taught to cardiac patients. Patients and nurses are asked to attribute a rating from "not important" (1) to "very important" (5) for each item. A mean score was calculated for each part by categories. The higher the score, the more important the information contained in this category. For purposes of this study, the scale was translated

into Arabic. The CPLNI scale contains 43 items grouped into eight categories: introduction to the CCU, cardiovascular anatomy, physiology, psychological concerns, risk factors, information about medications, information about physical activity, and other pertinent information. This last category consists of items that are commonly taught to cardiac patients and that did not apply to other categories, such as when to call the doctor, how to take a pulse, and the signs and symptoms of congestive heart failure.

1. Validity

Content validity of the CPLNI scale was reported by Gerard and Peterson (1984) as being based upon an exhaustive review of the literature concerned with teaching cardiac patients. In addition, Gerard and Peterson reported the items for the scale were reviewed by five experts in the field of cardiovascular nursing. Revisions of the wording of items and instructions to subjects were made on the advice of these experts.

In order to ensure the appropriateness of the Arabic version of the CPLNI scale (Appendix B) for Bahraini patients, the instrument was reviewed by four Bahraini nurses and three Bahraini cardiologists. All agreed that items on the scale were applicable to Bahraini patients recovering from MI.

E. Ethical considerations

Permission to conduct the study was granted by the Institutional Review Board of the University of Illinois at Chicago, Health Sciences Center. In Bahrain, approval to conduct the patient interviews for this

research was obtained from the hospital administrator and three cardiologists of the medical clinic at the medical center. Further permission for the nurse interviews was obtained from the principal nursing officer.

There were no risks for those participating in the study. Subjects were informed that participation in the study was voluntary and that a decision not to participate would in no way affect their treatment.

F. Procedure

Charts of MI patients were reviewed to identify patients who met the study criteria. Data were collected in structured personal interviews lasting between 20-35 minutes. The investigator went to the CCU and the postcoronary unit on a daily basis to identify patients to be included in the study. Medical clinic nurses were also consulted to identify patients for inclusion in the study. Once the patients were identified, the purpose of the study was then explained to them. When a patient agreed to participate, a verbal consent was obtained (Appendix C). The investigator also went through the medical records to find which MI patients had future appointments. She then made a list of the names and times and gave the information to the clinical nurses so they could inform her when the patients arrived.

Bahraini MI patients were interviewed while they were waiting to see their doctor at the medical clinic, thus keeping their time at the medical clinic to a minimum. They were interviewed in a private room in the medical clinic. Each subject was given a copy of the Arabic version of the CPLNI scale. The scale was introduced to the subjects (patients and

nurses) by asking them to rate the importance of the items while in the CCU. Any additional information volunteered by the patients was also recorded. The investigator then read the items on the scale and recorded the responses for each item. Sociodemographic and illness-related data were obtained directly from the patients or from their medical charts.

The nurses were informed about the study through a written notice by the nursing officer of the medical center. The investigator gave each nurse a copy of the CPLNI to use during the interview. Background information on the nurses was obtained during the interviews, each of which took place on an individual basis in a private room.

IV. RESULTS

The results are presented in the following order: patients' perceptions, nurses' perceptions, comparison of patients' and nurses' perceptions, comparison of male and female patients' results, and comparison of Bahraini results with American results.

A. Patients' perceptions

For the CPLNI scale (maximum possible score = 215), the range of patients' perceptions was from 162 to 215, with a mean of 179.33 and a standard deviation of 11.69. The highest-ranked single items identified by the patients were chances of decreasing heart attacks and concerns of learning cardiopulmonary resuscitation (CPR) (Table I). Other high ranking concerns were chest pain management, causes of heart attacks, the healing process, increasing activity, and reasons for chest pain and dietary restriction.

Patients ranked the following as being moderately high: activity restriction, medication side effects, medication problems, medication intake, diet information, and heartbeat irregularities.

The following items were ranked low to moderate: changed activity patterns, dietary effects, stress reduction at home, sexual activity, activity guidelines, anatomy of the heart, and effects of stress. Most of the patients were concerned with what effects diet has on the heart.

The lowest-ranked items were such things as CCU routines, intravenous lines, signs and symptoms of angina, counting pulse, signs and

TABLE I

RANK ORDERING OF ITEMS ON THE CARDIAC PATIENTS LEARNING
NEEDS INVENTORY BY CONVALESCING BAHRAINI MYOCARDIAL
INFARCTION PATIENTS AND CORONARY CARE NURSES

Item	Patients		Nurses	
	Mean	Rank	Mean	Rank
20. What I can do to decrease my chances of having another heart attack?	4.43	1.5	4.57	3
33. Where my family can go to learn CPR?	4.43	1.5	3.43	14.5
6. What to do if I have chest pain?	4.42	3	4.71	2
9. What caused my heart attack?	4.38	4	4.50	4.5
19. Which risk factors may have contributed to the onset of my heart disease?	4.37	5	4.43	8
11. How the heart heals?	4.35	6.5	3.79	40
35. The importance of knowing the signs of too much activity?	4.35	6.5	4.36	11.5
7. Why I had chest pain?	4.33	8.5	4.14	24
30. What my diet restrictions are, if any?	4.33	8.5	4.00	34
34. Need to know information about resuming normal activities?	4.32	10	4.21	19.5
24. What the side effects of each medication are?	4.30	11	4.14	24
25. What I do if I have problems with my medication?	4.28	12	4.29	14.5
22. General rules about taking medications?	4.27	13	4.50	4.5
10. What happens when someone has a heart attack?	4.23	14.5	4.21	19.5
23. Why I am taking each of my medications?	4.23	14.5	4.43	8

TABLE I (continued)

RANK ORDERING OF ITEMS ON THE CARDIAC PATIENTS LEARNING
NEEDS INVENTORY BY CONVALESCING BAHRAINI MYOCARDIAL
INFARCTION PATIENTS AND CORONARY CARE NURSES

Item	Patients		Nurses	
	Mean	Rank	Mean	Rank
12. Why my heartbeat may be irregular or I may have "skipped beats"?	4.22	16.5	3.86	38.5
21. How these risk factors affect my heart?	4.22	16.5	4.36	11.5
13. The normal psychological response to having a serious illness?	4.20	19	4.07	28
29. What foods contain cholesterol and tryiglycerides?	4.20	19	4.14	24
31. If any other tests will be planned after leaving the hospitals?	4.20	19	3.86	38.5
17. What I can do to reduce stress when at home?	4.18	22	4.29	14.5
27. How diet affects my heart disease?	4.18	22	4.00	34
32. The reason for further testing after I went home?	4.18	22	4.00	34
8. What my heart looks like and how it works?	4.17	24.5	4.07	28
43. How to adapt the recommended diet to my lifestyle?	4.17	24.5	4.29	14.5
1. Why I was in the coronary unit?	4.15	27.5	4.79	1
2. What tests were done to determine if I have had a heart attack?	4.15	27.5	4.43	8
15. What effect stress has on my heart?	4.15	27.5	4.07	28
36. When I can engage in sexual activity?	4.15	27.5	4.43	8

TABLE I (continued)

RANK ORDERING OF ITEMS ON THE CARDIAC PATIENTS LEARNING
NEEDS INVENTORY BY CONVALESCING BAHRAINI MYOCARDIAL
INFARCTION PATIENTS AND CORONARY CARE NURSES

Item	Patients		Nurses	
	Mean	Rank	Mean	Rank
26. General rules about diet?	4.13	31	4.21	19.5
41. General guidelines for physical activity?	4.13	31	4.21	19.5
42. If any other tests will be done after I go home?	4.13	31	4.07	28
16. What I could do to reduce stress while in the hospital?	4.12	33.5	4.07	28
18. What the term "risk factor" means?	4.12	33.5	4.00	34
4. Why my activity was limited?	4.10	35	4.43	8
28. What the words "cholesterol" and "triglycerides" mean?	4.07	36	3.57	42.5
5. What were the usual nursing routines and coronary unit policies?	4.05	37	3.57	42.5
40. When to call the doctor?	4.03	38	3.71	41
14. The importance of talking to someone about my fears, feelings, thoughts?	4.00	39	4.00	34
3. Why I had an intravenous line (IV)?	3.95	40	4.21	19.5
39. The signs and symptoms of congestive heart failure?	3.77	41	4.21	19.5
37. How to take my pulse?	3.60	42	4.00	34
38. The signs and symptoms of angina and heart attack?	3.58	43	4.00	34

symptoms of heart attack, cholesterol and triglyceride definitions, and stress reduction in the hospital.

B. Nurses' perceptions

For nurses the range on the CPLNI scale was from 103 to 165, with a mean of 144.28 and a standard deviation of 14.83. The items ranked highest by nurses (Table I) were why in the CCU, chest pain management, chances of decreasing heart attack, cause of heart attack, medication intake, risk factors associated with heart attacks, reasons for medication, effects of stress, tests for heart attack, and sexual activity.

The high-to-moderate items as ranked by nurses include medication side effects, activity restriction, medication problems, pathophysiology, risk factors affecting the heart, diet information, and stress reduction at home.

The nurses ranked the following items as low to moderate: change in activity patterns, dietary effects, beat differences (irregularities), psychological responses, risk factor definitions, counting pulse, and signs and symptoms of angina.

The low-ranked items were the necessity of other tests, diet and lifestyle, CCU routines, seeking medical help, talking to someone, stress reduction at the hospital, counting pulse, and the healing process.

C. Comparison of patients' and nurses' perceptions

The patients and the nurses were compared using Spearman's rank correlation. The correlations were used to compare mean ratings of the items of the CPLNI scale. There was a significant, though weak,

relationship ($r = .274$, $p < .05$) between nurses' and patients' ranking of items. The items ranked highest by patients were learning CPR and decreasing chances of heart attack. Nurses were significantly different in ranking the highest items. Their highest ranked items were why in CCU, chest pain management, and decreasing chances of heart attack. Both patients and nurses perceive that information about decreasing chances of heart attack is necessary for patients to learn, both while ill in the hospital and when they go home.

The items ranked lowest by patients were sign and symptoms of angina, heart attack, definitions of cholesterol and triglycerides. The nurses' lowest rankings were on such items as CCU routines, diet and lifestyle, and the healing process. The differences between patients and nurses suggest that the groups have different perceptions about the least important learning needs of MI patients.

There was a significant difference in the ratings of activity limit: patients ranked it low (35); nurses, very high (8). For the item on the healing process, patients ranked it 6.5 and nurses ranked it 40, a significant difference. There was similar direction to the ranking of diet restriction, patients ranked it 8.5, but nurses ranked it 34. Likewise for heart beat differences (irregularities): patients ranked it 16.5, but nurses ranked it 38.5. Patients ranked other tests necessary for MI as 19; nurses, 38.5. The groups also differed in their ranking of diet and lifestyle, with patients ranking it 24.5 and nurses ranking it 14.5. Engaging in sexual activity was ranked only 27.5 by the patients, but 8 by the nurses.

Patients perceived some items as less important and so did the nurses. For example, the item talking to someone received a 39 from the patients and a 34 from the nurses. Also, the signs and symptoms of heart attack was ranked 41 by patients and 19.5 by nurses.

From the above data it can be seen that there were significant differences between patients and nurses with respect to those items. For items that are not listed above, patients and nurses rated them as important and there were no significant differences between the groups.

D. Comparison of male and female patients' perceptions

In order to compare the male and female patients' perceptions of the learning needs, Spearman's rank-order correlation was used. The finding indicated that there is very high agreement between the male and female patients ($r = .94$, $p < .01$). The items ranked highest by the male patients (Table II) were chest pain management, learning CPR, chances of decreasing heart attack, cause of heart attack, risk factors associated with heart attack, increasing activity, why chest pain, healing process, activity restriction, and diet restriction. Female patients ranked the above items moderately high to moderately low, but rated chest pain management as the highest.

Males rated the following items as moderately high: side effects of medication, medication rules, medication problem, stress effects on heart, reason for taking medication, sexual activity, and psychological response. Females rated these same items as moderately low and low.

The male patients gave moderately low ratings to test for heart attack, diet effects on the heart, activity, risk factors affecting the

TABLE II

RANK ORDERING OF ITEMS ON THE CARDIAC PATIENTS LEARNING
NEEDS INVENTORY BY CONVALESCING MALE AND FEMALE
BAHRAINI MYOCARDIAL INFARCTION PATIENTS

Item	Males		Females	
	Mean	Rank	Mean	Rank
6. What to do if I have chest pain?	4.52	1.5	4.13	22.5
33. Where my family can go to learn CPR?	4.52	1.5	4.19	14
20. What I can do to decrease my chances of having another heart attack?	4.45	3	4.38	1
9. What caused my heart attack?	4.43	5	4.25	7
19. Which risk factors may have contributed to the onset of my heart disease?	4.43	5	4.19	14
35. The importance of knowing the signs of too much activity?	4.43	5	4.13	22.5
7. Why I had chest pain?	4.41	7	4.13	22.5
11. How the heart heals?	4.39	8	4.25	7
34. Need to know information about resuming normal activities?	4.36	9	4.19	14
30. What my diet restrictions are, if any?	4.34	10	4.31	2.5
22. General rules about taking medications?	4.32	11.5	4.13	22.5
24. What the side effects of each medication are?	4.32	11.5	4.25	7
25. What I do if I have problems with my medication?	4.30	13	4.25	7
12. Why my heartbeat may be irregular or I may have "skipped beats"?	4.27	14.5	4.06	30.5
31. If any other tests will be planned after leaving the hospitals?	4.27	14.5	4.00	34

TABLE II (continued)

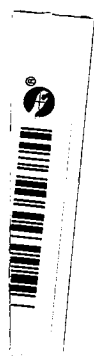
RANK ORDERING OF ITEMS ON THE CARDIAC PATIENTS LEARNING
NEEDS INVENTORY BY CONVALESCING MALE AND FEMALE
BAHRAINI MYOCARDIAL INFARCTION PATIENTS

Item	Males		Females	
	Mean	Rank	Mean	Rank
1. Why I was in the coronary unit?	4.25	17	3.88	38
15. What effect stress has on my heart?	4.25	17	3.88	38
23. Why I am taking each of my medications?	4.25	17	4.19	14
10. What happens when someone has a heart attack?	4.23	20.5	4.25	7
13. The normal psychological response to having a serious illness?	4.23	20.5	4.13	22.5
32. The reason for further testing after I went home?	4.23	20.5	4.06	30.5
36. When I can engage in sexual activity?	4.23	20.5	3.94	35.5
8. What my heart looks like and how it works?	4.20	24.5	4.06	30.5
17. What I can do to reduce stress when at home?	4.20	24.5	4.06	30.5
18. What the term "risk factor" means?	4.20	24.5	3.88	38
21. How these risk factors affect my heart?	4.20	24.5	4.25	7
27. How diet affects my heart disease?	4.18	27.5	4.19	14
43. How to adapt the recommended diet to my lifestyle?	4.18	27.5	4.13	22.5
2. What tests were done to determine if I have had a heart attack?	4.16	30	4.13	22.5
29. What foods contain cholesterol and tryiglycerides?	4.16	30	4.31	2.5

TABLE II (continued)

RANK ORDERING OF ITEMS ON THE CARDIAC PATIENTS LEARNING
NEEDS INVENTORY BY CONVALESCING MALE AND FEMALE
BAHRAINI MYOCARDIAL INFARCTION PATIENTS

Item	Males		Females	
	Mean	Rank	Mean	Rank
41. General guidelines for physical activity?	4.16	30	4.06	30.5
16. What I could do to reduce stress while in the hospital?	4.14	32.5	4.06	30.5
42. If any other tests will be done after I go home?	4.14	32.5	4.13	22.5
26. General rules about diet?	4.09	34	4.25	7
4. Why my activity was limited?	4.07	35.5	4.19	14
14. The importance of talking to someone about my fears, feelings, thoughts?	4.07	35.5	3.81	40
28. What the words "cholesterol" and "triglycerides" mean?	4.02	37.5	4.19	14
5. What were the usual nursing routines and coronary unit policies?	4.02	37.5	4.13	22.5
40. When to call the doctor?	4.00	39	4.13	22.5
3. Why I had an intravenous line (IV)?	3.95	40	3.94	35.5
37. How to take my pulse?	3.77	41	3.31	42.5
39. The signs and symptoms of congestive heart failure?	3.70	42	3.75	41
38. The signs and symptoms of angina and heart attack?	3.68	43	3.31	42.5



heart, risk factor definition, stress reduction at home, anatomy and physiology of the heart, causes of heart attack, beat differences (irregularities), and psychological response.

E. Comparison of American and Bahraini results

A comparison of Gerard and Peterson's (1984) findings with those of the current study yielded the following results: American patients ranked items on risk factors as the highest in importance. Bahraini patients, however, ranked learning CPR and decreasing chances of heart attack recurrence as the highest items. The American nurses considered anatomy and physiology as the most important, but Bahraini nurses considered explanation of the CCU, chest pain management, and chances of decreasing heart attack recurrence as the most important items.

Both the American and Bahraini subjects who were involved in these studies showed great interest in the informational needs necessary for cardiac patients. This confirms Heninen's (1986) observation that "Teaching is an important factor in improving myocardial infarction patients recovery. Knowledge concerning the situation, becoming ill, and treatment as well as part of the support are transmitted through the teaching" (p. 125).

V. DISCUSSION

A. Conclusion

This exploratory study compared perceptions of patients and nurses, male and female Bahraini MI patients, and American and Bahraini results on the learning needs of cardiac patients for information about cardiac disease. To assess perceived learning needs of both subject groups, all subjects were asked to rank the importance of 43 informational items on the CPLNI scale (Gerard and Peterson, 1984). The subjects rated items on a Likert-type scale that ranged from 1 to 5, where a score of 5 is very important and a score of 1 is not important. In addition to the CPLNI, the subjects were asked for their rationale as to why certain items were of particular concern to them. A comparison of Gerard and Peterson's (1984) results on American subjects with those from the present study of Bahraini nurses and patients, showed that both groups ranked the information on patient education of learning needs regarding cardiac disease as very important. All agreed that there should be patient education programs to provide information to patients about such information, but there were minor differences between the ranking of which items were most important to teach. In general, Bahraini patients wanted the information from a rehabilitation program in order to recover and survive their recent myocardial infarction.

The major finding from this study was that there was little agreement between nurses and patients on the relative importance of specified learning needs for cardiac patients. The overall mean of all the items

was greater for patients than for nurses, 179 and 144, respectively. However, inspection of individual item means shows that items were generally viewed by all subjects as moderately to very important: No individual item mean fell below 3.4. Although the agreement between patients and nurses was not high, it could be concluded that both groups felt that all items had a good deal of importance.

B. Discussion

1. Patients' perceptions

In the patient group, there were two perceived learning needs ranked highest. These were concern about how to decrease chances of a heart attack and how to learn CPR. Other high-ranked items included concerns about why chest pain occurs and how to manage it, questions about the cause of heart attack, concerns about risk factors associated with heart attack, questions about the healing process after a heart attack, questions about how to increase their activity level, and concerns about dietary restrictions. These items will be discussed in the following sections.

a. Items ranked high

Patients gave a high ranking to their chances of decreasing a heart attack because many of them were concerned about their disease and were afraid of dying as a result. In addition, the male subjects were concerned about who would take care of their families; this was a common theme in situations where the male patient was the sole source of income for the family. Furthermore, chances of decreasing a heart attack was a major concern to this group because the subjects did

not like to be ill, lose their jobs, or have any changes in their social activities. The subjects reported not wanting to go through this experience again if it was at all possible.

These findings are consistent with those of researchers who have identified that patients are interested in learning about their disease (Dodge, 1969; Moynihan, 1984). In a study of 166 patients, Dodge (1969) found that patients were concerned with receiving information about self-care, medication, diagnosis, and treatment. In addition, Moynihan (1984) noted that widespread public education about heart disease and about how to decrease risk factors has a significant role in decreasing the incidence of death from heart disease. The patients' concern about their psychosocial functioning is supported by the literature (Horlick et al., 1984) in that psychological malfunction is a common problem among MI patients. Individuals who have experienced MIs have been noted to experience psychological distress, anxiety, and depression.

The other item ranked highest was a concern about learning CPR. The patients reported that when they experienced their heart attack, no one in the family knew what to do. Family members panicked, became restless and emotional, and did not administer any form of first aid. All of these factors caused the patients to feel very anxious. The patients stated that they would like their family members to learn CPR in order to manage any future crisis. These concerns and fears are substantiated by Howard and Erlanger (1983), who noted that patients have fears about premature death or incomplete recovery, loss of self-esteem, and changes.

b. Items ranked moderately high

The patients had many questions and concerns about problems they would encounter at home and in returning to work; these items were ranked moderately high. The subjects wondered why their activities were restricted, wondered why they had heart beat differences, and were concerned about when they could exercise or engage in sexual activity. Regarding diet, the subjects wanted to know how much fat and salt they could consume. They had multiple concerns regarding medication, ranging from the mechanism and rationale for taking the drugs to side effects they might experience. These concerns were also consistent with findings in the literature. Dodge (1969) and Rahe et al. (1975) noted that patients had concerns about their home life and their return to work. Furthermore, Richard (1966) noted that patients wanted to be informed about their diets, activity levels, medications, and reasons for treatments.

c. Items ranked moderately low

The patients ranked the following items moderately low: changed activity patterns and guidelines, dietary effects, the effects of stress, stress reduction at home, sexual activity, and anatomy of the heart. Regarding sexual activity, patients reported that their sexual desire had decreased and that they would like health professionals to address this problem. This is consistent with the findings of Jenkins and Kent (1984), who remarked that patients are concerned and want information about sexual activity.

In respect to wanting to know about the anatomy and physiology of the heart, there were differences in the patient group based upon educational level. The patients who had no formal education stated that they were not interested in the anatomy and physiology of the heart because they would not understand the medical terminology. On the other hand, the patients with formal education considered learning medical terminology important because this would help them learn about the normal functioning of the heart and what happens to those functions in heart disease. The majority of patients believed that health education should be taught in the schools and that members of the general public should be taught about heart disease and CPR. These findings are consistent with those reported by Jenkins and Kent (1984), who noted that patients in their study valued and desired more extensive health education.

Regarding stress and anxiety, the patients wanted to know about stress and the effects of stress on the heart. Patients were also interested in stress reduction techniques. Owens and Hutelmyer (1978) reported similar findings in their study on the effectiveness of health teaching to cardiac patients.

d. Items ranked low

The items that received the lowest rank included receiving information about CCU routines, learning the signs and symptoms of angina and heart attack, learning how to count one's own pulse, learning about cholesterol and triglycerides, and learning about stress reduction while in the hospital. The reasons given for these low-ranked items were varied in the patient group. The majority of the patients did not

want to know about signs and symptoms; they felt that this information would make them worry more. A smaller number of patients indicated that if they had known the signs and symptoms, they might have been able to prevent complications if they had sought medical assistance earlier. Rosenberg (1971) noted that patient education is crucial in order to increase the patients' knowledge and decrease hospitalization of heart patients. These findings are consistent with those of the Bahraini patients. Therefore, patient education is necessary in all countries and cultures.

2. Nurses' perceptions

a. Items ranked high

The following items were ranked high by the nurse subjects: why in the CCU, learning how to decrease the chances of a heart attack, the causes of a heart attack, how to manage chest pain, rationale for taking medication, learning about the effects of stress, and questions about sexual activity. The nurses indicated that patients should know the reason for being in the CCU so that they would not be in a vacuum and could learn the policies and routines of the CCU. They reported ranking the other items high because these are patient education concerns that will promote the patients' survival and adaptation to their illness.

Regarding chest pain management and the causes of heart attack, the nurses felt that it was important for patients to be as independent as possible in Bahrain. In order to survive such a crisis as a myocardial infarction, the patients must be knowledgeable about their disease.

This is of prime concern, for patients must travel long distances in order to receive treatment. Thus, prevention of future heart attacks and knowing basic first aid will increase the patients' chances of survival.

In respect to medications, the nurses considered knowledge about the drugs and their effects and side effects as very important. The nurses felt that this information would increase the chances of patients' taking their medications accurately and decrease the chances of any complications. This finding was consistent Gerard and Peterson's (1984) that nurses rated the items on medication high in terms of the patients' learning needs.

b. Items ranked moderately high

The nurses ranked the following items moderately high: when to increase activities, reason for chest pain, why patients cannot do as much activity as they used to, what happens when one has a heart attack, risk factors' effect on the heart, how to reduce stress at home and in the hospital , and dietary information.

Nurses felt that patients should know everything about their diet, stress reduction both at home and in the hospital, and about medication. They indicated that Bahraini patients who stop their medications early or do not take them regularly are probably not aware of the importance of the medication or the effects of stopping the medication. Patients and family are under continuous tension and worry due to the disease. There should be a specialist available when they need someone to talk to.

Nurses show concerns about the above information because the aim of the educational program is to give the patient and family some basic understanding of the illness and the recovery process. Nursing staff play an important role in a patient's recovery from the time the patient is admitted to the CCU. They assess the patient's immediate and future needs, alleviate anxieties, and help in the rehabilitation from MI. These findings are consistent with those of Pinneo (1984) that nurses play an important role in the early and late convalescence as patients' supports.

c. Items ranked moderately low

The nurses ranked the following items moderately low: risk factor definition, talking to someone about fears and feelings, counting pulse, knowing signs and symptoms of angina and heart attack, dietary restrictions, and psychological responses to illness. Nurses ranked these items moderately low because in their experience with cardiac patients, most patients did not want to talk, they wanted to rest without being disturbed. They also thought that items such as counting pulse, seeking medical help, and signs and symptoms of angina would not be applicable to such patients.

d. Items ranked low

The items that received the lowest ranks included information about CCU routines, when to seek medical help, heartbeat differences, the healing process, other tests necessary for MI patients, diet and lifestyle information, and the definition of cholesterol and triglycerides. These lowest-ranked items were not much different from those

ranked lowest by the patients. Nurses indicated that patients do not need to learn about the healing process because the patients do not understand anatomy and physiology and thus will not understand the pathological changes. The nurses were basing this view on their practice with the patient population in the CCU, most of whom are elderly patients. Further, they felt that the patients would not be able to notice the presence of their irregular heartbeats. In addition, calling a doctor is not a common practice in Bahrain, another reason for rating this particular item low.

3. Comparison of patients' and nurses' perceptions

The two groups of patients and nurses were compared using Spearman's rank-order correlation. The correlations were used to compare mean ratings of the items on the CPLNI scale. The correlation between nurses' ranks and patients' rank was $r = .274$, significant at the .05 level.

There were significant differences between patients' and nurses' perceptions for items such as why the patient is in the CCU, tests for heart attack, effects of stress, and sexual activity. Patients rated these as moderate to moderately low; nurses rated these items as high. The nurses thought that patients should know this information because most of the time patients do not understand why they are in the CCU, the reasons for tests and what types of tests are needed for heart attack, what effect stress has on the heart, and whether or not stress really does increase the risk of a heart attack.

a. Items ranked high

The highest items as ranked by the patients were learning CPR and decreasing chances of heart attack. Nurses rated high-ranked items differently from patients; these included why the patient was in the CCU and information about chest pain management. Nurses ranked chances of decreasing heart attack as third, high enough to indicate that both patients and nurses perceived this information as necessary for a patient to learn, both while ill in the hospital and when the patient has gone home, because patients lack this information.

b. Items ranked moderately high

The items rated moderately high by nurses included items such as increasing activity, medication intake, and stress reduction at home. Patients ranked moderately high such items as reasons for medication, diet information, psychological response, and the necessity for other tests.

Both patients and nurses ranked the items on the cause of heart attack and risk factors associated with heart attack exactly the same. The reason for this was that both groups felt that these items are very important for patients who had cardiac disease to know. Such knowledge can help prevent complications, improve patients' knowledge about their disease, and increase awareness among the patient's family members. As nurses play an important role in patients' education, nurses must encourage patients and their families to learn about prevention and how to take care of themselves.

c. Items ranked moderately low

Items ranked moderately low were why having chest pain, medication side effects, diet information, normal psychological response to an illness, anatomy and physiology of the heart, and the effect of stress on the heart. Nurses ranked these items moderately low based on their experience with MI patients: They considered these items moderately important for patients to know because most of their patients are not educated and could not learn this information.

d. Items ranked low

The items ranked lowest by the patients were information about the healing process; diet restrictions; heart beat irregularities; other tests necessary before leaving the hospital; the effects of diet on the heart; reasons for further testing when going home; the definition of risk factors; the definition of cholesterol and triglycerides; the usual nursing routines in the CCU; when to seek medical help; importance of talking to someone about fears, anxiety, and feelings; how to count the pulse; and signs and symptoms of angina and heart attack. The nurses' lowest rankings were on such items as CCU routines, diet and lifestyle, and the healing process. These differences between nurses and patients suggest that nurses and patients differ in their perceptions of the least important learning needs of cardiac patients.

4. Comparison of male and female patients' perceptions

In order to assess the perceptions of learning needs that male and female MI patients had and to compare the males' results with the females', a Spearman's rank-order correlation was calculated ($r = .944$).

Differences were found between male and female patients concerning their perceptions of the degree of importance of learning needs.

a. Items ranked high

Male patients rated information about chances of decreasing heart attack, learning CPR, and managing chest pain as highest in importance. Other items rated high by the males included causes of heart attack, risk factors contributing to heart attack, the importance of knowing the signs of too much activity, reasons for chest pain, how the heart heals, knowing information about resuming activity, and diet restriction. Jenkins and Kent (1984) explained that the patient with a heart attack is anxious to obtain more information about the disease and that the value patients put on such information is confirmed by their wish for "more health education and even an interest in cardiopulmonary resuscitation" (p. 108). With regard to CPR, Bahraini male patients showed great interest in learning this skill because after their first experience with a heart attack, they realized that a lot of tension and anxiety would have been relieved and, if needed, their lives could have been saved if someone knew basic CPR or first aid. Patients also mentioned that having this knowledge would have encouraged them to seek medical assistance earlier and not deny to themselves that they were having MI. Their emotional tension would have been lessened and family tension would have been reduced. Females stated that it is necessary to know all this information, but as they are old this would be more applicable to their children who are educated. Dodge (1972) discussed the concern of patients about receiving the kinds of information which would

enable them to plan realistically for their immediate and long-range lives.

Differences were also found between males' and females' perceptions in regard to items on pathophysiology. Females ranked these items high, but males ranked them low. This is due to female patients' wanting to know what happens when a person has a heart attack and all the changes that occur. Male patients ranked the items low because they expressed their fear of tension and anxiety if they were to know what happens when they have a heart attack.

Bahraini male patients rated these items high because of their recent experience with cardiac disease; they realized that if someone in the family or if they, themselves, knew how to manage the illness, then denial, anxiety, tension, and emotional problems could be lessened. The male patients also were concerned about knowledge of their condition and noted that if they were knowledgeable about their disease, then they would cooperate better with the health care professionals. As Dodge (1969) noted, the more a patient knows about his condition, the more likely he is to cooperate successfully in his treatment. Furthermore, inadequate understanding can lead to a variety of emotional problems.

Another factor that Bahraini male patients were concerned with was the preventing further heart attacks. Jenkins and Kent (1984) stated that a myocardial infarction is a life-threatening disease which also causes significant morbidity. In recent years, considerable interest has focused on preventing reinfarction and providing physical treatment of the disease by the advent and use of such drugs as beta blockers.

However, little attention has been given to the psychosocial aspects of cardiac disease and to individual patients who want more information about their condition, its treatment, and prevention of recurrence.

Female patients rated decreasing the chances of having another heart attack as most important. The female patients also wanted to know diet restrictions were placed on them, which was also high for the men, and what foods contain cholesterol and triglycerides, ranked moderately low by the men, and general rules about diet, ranked low by the men. Chest pain management, one of the highest for the men, was ranked moderately low by the women. Other high-rated items for the female patients included causes of heart attack, how the heart heals, side effects of medication, what to do if one has problems with medication, what happens during a heart attack, and how risk factors affect the heart.

The male patients also wanted to know about their lifestyle restrictions. The questions they asked included how much activity they could engage in, will exertion affect their heart, can they go to work, and will they be able to do as much as they used to. The females ranked this item lower because the female patients interviewed fit the category of people who are not aware of how activity and lifestyle can affect the heart.

b. Items ranked moderately high

Items that were rated moderately high in importance by the male patients included general rules about medication, side effects of medication, and what to do about problems with medication. They also wanted to know if further testing was planned after they left the

hospital, the effects of stress on the heart, why they had to take medications, and why they were in the CCU. Female patients rated as moderately high such items as where family members could learn CPR, what risk factors contribute to heart disease, information about resuming normal activities, why they needed to take medications, the effect of diet on heart disease, why their activity was limited, and the definition of cholesterol and triglycerides.

The male patients thought it important to know about why medication information was important, what will happen if they stopped their medication (i.e., will they die?), is it necessary to continue their medication even though they feel much better or have no pain. Female patients rated these items moderately low and low. The ranking of medication knowledge indicates that it is a major cardiovascular learning need and that medication should be used in teaching individual patients to help them take their medication as ordered by their doctors.

Additional differences were found between male and female patients in ranking the importance of knowing about heartbeat differences: Males ranked it moderately high and females ranked it low. This is due to the male patients' awareness of their heartbeat irregularity and their concern about knowing the different kinds of heartbeats. Female respondents felt that they did not need to learn about heartbeat differences because they could not recognize these differences. Only one female--30 years old and educated--stated that such information is necessary for patients to know.

c. Items ranked moderately low

The male patients ranked the following items as moderately low in importance: Information about returning to sexual activity, the pathophysiology of heart attacks, the normal psychological response to serious illnesses, the reason for further testing after returning home, the reduction of stress at home, the anatomy and physiology of the heart, the definition of risk factors, how risk factors affect the heart, how diet affects heart disease, how to adapt a recommended diet to lifestyle, general guidelines for physical activity, what tests were done to confirm MI, what foods contain cholesterol and triglycerides, how to reduce stress in the hospital, and what tests might be done after returning home. Among the above items, female patients gave higher ratings to the pathophysiology of heart attacks, how risk factors affect the heart, how diet affects heart disease, and what foods contain cholesterol and triglycerides. They gave lower ratings to returning to sexual activity and the definition of risk factors. Otherwise, they agreed with the male patients regarding the above listing. However, the female patients also listed the following as being moderately low in importance: information concerning what to do about chest pain, knowing the signs of too much activity, why chest pain was present, whether other tests will be planned after leaving the hospital, what were the usual nursing routines and CCU policies, and when to call a doctor. Gerard and Peterson (1984) had identified a number of the above items as necessary learning needs for patients, and her patients, unlike the Bahrainis, ranked them high.

Male patients, even though they were in their 70s, showed great concern about the desire to have sex and stressed that they would like some kind of treatment in order to strengthen their sexual function (activity) which was reduced since they got sick. Male patients also considered this item as important because they do not know if they can have sex or not, whether having sex will cause their disease to worsen. Some of them said that since they got sick they stopped sexual activity because they were afraid that they will die or get chest pains; some of them acknowledged having had pain during sexual activity.

Female patients were interested in knowing about sexual information because then they would not have to worry about pain or death. Only one female said that she was not interested in sex since she got sick but her husband would not understand. She also mentioned that she has not had enough rest with children and housework. She was interested in having her husband become knowledgeable about this matter.

Pinneo (1984) suggested that men received greater support post MI than female patients do. She found that women had a more difficult postinfarction course than men: They took a longer period to return to work and to resume sexual functioning and they had poorer rehabilitation outcomes. She stated that women need special consideration during their rehabilitation. Many women are housewives and frequently do not take rest periods during their daily activities. Women may view their regular household activities as requiring low energy; they need to be educated that household activities require high amounts of energy. They need to be encouraged to limit these activities during their early weeks

of convalescence despite feelings of responsibility for maintaining their home. Nurses should encourage women to solicit and accept support from family members rather than resisting help with routine housework. Career and working women may face more stress than their male counterparts. Married women with careers who suffer a myocardial infarction may place undue blame for it on their choice of lifestyle rather than the pathologic disease process. It may be possible that these findings would have been different if younger and educated females had been among the respondents surveyed.

d. Items ranked low

Both the male and female patients listed information about the signs and symptoms of angina and heart attack, the signs and symptoms of congestive heart failure, and how to take a pulse as the least important items for cardiac disease patient to know. They also agreed that the importance of talking to someone about fears, feelings, and thoughts, and knowing why they had an IV line were items of low importance. The males, however, also listed information about general rules of diet as low; the females had listed it as high. The males included knowing why activity was restricted and the definitions of cholesterol and triglycerides as low importance items, but the females had listed these items as being moderately high in importance. Finally, the males listed knowledge about the nursing routines and policies in the CCU and when to call a doctor as low importance, but the females rated them as being of moderately low importance. Items that the females had considered to be of low importance included information about whether other

tests were planned after they left the hospital, the effect of stress on the heart, and why they were in the CCU; the males had rated these items in the moderately high category. Other items rated of low importance by the females, but moderately low by the males, included information about returning to sexual activity and the definition of the term risk factor.

5. Comparison of American and Bahraini findings

A comparison of the perceptions of American and Bahraini MI patients supports the findings of Baden (1972), Duncan et al. (1973), and Kelsey and Beamer (1973). In Bahrain, where there are no teaching programs to provide MI patients with the skills and information about their disease, the patients rated the items differently than did the Americans. They showed greater interest in having such a program available to help them with their disease, and they wanted their family involved in patient care and in the educational program.

C. Implications and recommendations

This exploratory study was carried out to find out the perceptions of the learning needs of cardiac patients in order to establish a teaching program in the future for Bahraini patients. The result of this study supported the literature recommending that cardiac patients be given information about diet, medications, risk factors, physical activity, and other information such as learning CPR.

Because both American and Bahraini nurses and patients have stated the importance of patient education, it is recommended that this study be replicated with a larger sample to determine the need for a program to educate the public (MI patients) about the ideal approach to

prevention of coronary atherosclerotic heart disease, reducing risk factors, and recognizing the early warning signs of a heart attack.

Assume that such a study found the establishment of a program in Bahrain would be justified. To be sure there is no discrepancy in the emphasis or instructions given to the patients, doctors and nurses should undergo the same training program in cardiac rehabilitation. Once the program was in place, it would be evaluated in the following manner: Patients would be tested about their knowledge of topics important in cardiac rehabilitation. Then they would participate in the educational program and be tested to ascertain the extent to which the knowledge has been understood. The nurses and doctors could examine the results and reteach as necessary. If some areas were consistently misunderstood, that part of the program would need to be redesigned. As Orem (1980) stated, "Patient education requires knowledge on the nurses' part of the perceived needs of the cardiac patient" (p. 50).

After the program had been operating for some time, then this study should be replicated to see if the Bahraini patients' perceptions would be closer to those of the American patients in the Gerard and Peterson (1984) study.

VI. APPENDICES

Appendix A

CARDIAC PATIENTS LEARNING NEEDS INVENTORY

CARDIAC PATIENTS LEARNING NEEDS INVENTORY

Please rate each of the following informational items as to the degree of importance it has for you and other patients with heart disease. Please check one column for each item. The columns are coded as follows:

Degree of Importance

NI = Not important
 SI = Somewhat important
 MI = Moderately important
 I = Important
 VI = Very important

Degree of Importance					I need to know:
NI	SI	MI	I	VI	
					1. Why I was in the coronary unit?
					2. What tests were done to determine if I have had a heart attack?
					3. Why I had an intravenous line (IV)?
					4. Why my activity was limited?
					5. What were the usual nursing routines and coronary unit policies?
					6. What to do if I have chest pain?

Appendix A (continued)

CARDIAC PATIENTS LEARNING NEEDS INVENTORY (continued)

Degree of Importance					I need to know:
NI	SI	MI	I	VI	
					7. Why I had chest pain?
					8. What my heart looks like and how it works?
					9. What caused my heart attack?
					10. What happens when someone has a heart attack?
					11. How the heart heals?
					12. Why my heartbeat may be irregular or I may have "skipped beats"?
					13. The normal psychological response to having a serious illness?
					14. The importance of talking to someone about my fears, feelings, thoughts?
					15. What effect stress has on my heart?
					16. What I could do to reduce stress while in the hospital?
					17. What I can do to reduce stress when at home?
					18. What the term "risk factor" means?

Appendix A (continued)

CARDIAC PATIENTS LEARNING NEEDS INVENTORY (continued)

Degree of Importance					I need to know:
NI	SI	MI	I	VI	
					19. Which risk factors may have contributed to the onset of my heart disease?
					20. What I can do to decrease my chances of having another heart attack?
					21. How these risk factors affect my heart?
					22. General rules about taking medications?
					23. Why I am taking each of my medications?
					24. What the side effects of each medication are?
					25. What I do if I have problems with my medication?
					26. General rules about diet?
					27. How diet affects my heart disease?
					28. What the words "cholesterol" and "triglycerides" mean?
					29. What foods contain cholesterol and tryglycerides?
					30. What my diet restrictions are, if any? *

Appendix A (continued)

CARDIAC PATIENTS LEARNING NEEDS INVENTORY (continued)

Degree of Importance					I need to know:
NI	SI	MI	I	VI	
					31. If any other tests will be planned after leaving the hospitals?
					32. The reason for further testing after I went home?
					33. Where my family can go to learn CPR?
					34. Need to know information about resuming normal activities?
					35. The importance of knowing the signs of too much activity?
					36. When I can engage in sexual activity?
					37. How to take my pulse?
					38. The signs and symptoms of angina and heart attack?
					39. The signs and symptoms of congestive heart failure?
					40. When to call the doctor?
					41. General guidelines for physical activity?
					42. If any other tests will be done after I go home?
					43. How to adapt the recommended diet to my lifestyle?

CARDIAC PATIENTS LEARNING NEEDS INVENTORY
(ARABIC TRANSLATION)

الرجاء وضع علامة () لكل عبارة حسب أهميتها لك وللمريض القلب الأحمرين (يرجى وضع العلامة في عمود واحد فقط لكل عبارة).

اريد ان اعرف:

- ١ - لماذا كنت في وحدة العناية بالقلب ؟
- ٢ - ما هي الفحوصات التي أجريت لي لتأكد من أنني مصاب بالنوبة الغليبية ؟
- ٣ - لماذا أعطيت الحقنة الوريدية ؟
- ٤ - لماذا نمت بالحركة المحدودة ؟
- ٥ - ما هي الإجراءات التمريضية المفضلة التي اتبعت معي، وما هي الأنظمة المتبعة فسي وحدة العناية بالقلب ؟
- ٦ - ماذا أعمل عند احساسي بألم في صدري ؟
- ٧ - لماذا كنت أعاني من الألم في الصدر ؟
- ٨ - ما هي حالة قلبي وكيف يعمل ؟
- ٩ - ما هي الأسباب التي تسببت أعاني من السوءة الغليبية ؟

[illegible]

Appendix B (continued)

CARDIAC PATIENTS LEARNING NEEDS INVENTORY (continued)
(ARABIC TRANSLATION)

غير مهم	قليل بعض الشيء	متوسط الأهمية	هام	جدا	هام
					١٠ - ما الذي يحدث عندما يعاقب أحد ما بالنوبة القلبية؟
					١١ - كيف يشغل القلب؟
					١٢ - لماذا دقائق قلبي غير منتظمة، ولماذا تنقطع بعض الضربات عند العد؟
					١٣ - رد الفعل النفسي الطبيعي عند الأمابة يعرف خطير؟
					١٤ - أهمية التحدث مع أحد ما حول ما أعاني منه من مخاوف وأحاسيس وأفكار؟
					١٥ - ما هو تأثير الغفط النفسي على حالة القلب؟
					١٦ - ماذا يمكنني عمله لتجنب هذا الغفط النفسي عندما أكون في المستشفى؟
					١٧ - ماذا يمكنني عمله لتجنب هذا الغفط العصبي عندما أكون في المنزل؟
					١٨ - ماذا يعني "عامل الخطر"؟

Appendix B (continued)

CARDIAC PATIENTS LEARNING NEEDS INVENTORY (continued)
(ARABIC TRANSLATION)

[illegible]

Appendix B (continued)

CARDIAC PATIENTS' LEARNING NEEDS INVENTORY (continued)
(ARABIC TRANSLATION)

هام	جدا	هام	متوسط الأهمية	مهم بعض الشيء	غير مهم

٣٩ - ما هي الاعراض والعلامات لفشل القلب ؟

٤٠ - متى يستدعي الطبيب ؟

٤١ - هل هناك أي لحومات بعد مفارقتي المستشفى ؟

٤٢ - ما هي اسباب الفحوصات بعد ذهابي الى البيت ؟

٤٣ - ما هي القواعد المعاملة للتمارين الرياضية ؟

Appendix C

PATIENT PERMISSION FORM

I am Nasrat Esbai, I am interested in studying the learning needs of cardiac patients as perceived by patients and nurses in Bahrain.

I will be giving you a rating scale to fill out and I may have to interview you for demographic data. The result of the findings from the self-administered rating scale will be used for my master's thesis.

I am interested especially in a study to find out what are the learning needs of cardiac patients as perceived by nurses and patients in Bahrain and how we could help them once these needs are found.

You will be asked to rate these items from not important to very important. If there is anything that you do not understand, I will be happy to explain.

The paper that I write will have no names or any other form of identification. I would like your consent to be in the study. You may withdraw from the study at any time.

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VIII. VITA

NAME: Nasrat Abdulrasool Esbai

EDUCATION: Nursing diploma, Bahrain Government School of Nursing,
Manama, Bahrain, 1972

Registered General Nurse certificate, An Board Alternate,
Dublin, Ireland, 1977

B.A., Community Health Nursing, Concordia University,
Montreal, Quebec, Canada, 1983

M.S., Nursing Sciences, University of Illinois at Chicago,
Chicago, Illinois, 1987

PROFESSIONAL EXPERIENCE: Nursing Lecturer, College of Health Sciences, Bahrain,
1980-1984

Acting Head, Practical Nursing Program, and Instructor,
General Nurse Training and Practical Nurse Training, Yusuf
Kanoo School of Nursing, Bahrain, 1976-1978, 1979

Staff Nurse, Medical Surgical Ward, Pediatric Ward,
Medical Clinic, Gynaecology Clinic, and Infectious Ward,
1972-1975

PROFESSIONAL MEMBERSHIPS: British Medical Association
Midwest Nursing Research (MNRS) Association

SPECIAL PROFESSIONAL ACTIVITIES: Actively involved in developing and planning curriculum
activities for the Associate degree students

Involved in different types of committees in the College
of Health Sciences in Bahrain

Chairperson of the organizing committee for the 25th Anniv-
ersary of Nursing Education in Bahrain Conference, 1984

One of the first 16 Bahraini nurses who obtained a
Registered General Nurse (RGN) certificate from Dublin,
Ireland