THE EFFECTIVENESS OF PLANNED TEACHING OF MOTHERS WITH CHILDREN TREATED IN EMERGENCY DEPARTMENTS

by

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Date August, 1972
ABSTRACT

THE EFFECTIVENESS OF PLANNED TEACHING OF MOTHERS WITH CHILDREN TREATED IN EMERGENCY DEPARTMENTS

DENISE M. POWER

This study concerned itself with planned teaching in the hospital emergency department, that area of the hospital health care system that is becoming increasingly popular for short-term ambulatory care. However, the nursing care provided by this department has been largely unexplored by research.

The purpose of this experimental study was to determine whether planned teaching involving verbal and written instructions given to a mother prior to the discharge of her child from the emergency department following treatment for a traumatic limb fracture requiring cast application, would enable her to cope more adequately with the home care of her child than the mother not receiving this planned teaching. The Null hypothesis was tested: there is no significant difference in the coping abilities of the mothers of the experimental group as compared with the mothers of the control group.
Using five general hospital emergency departments, twenty mothers were assigned to alternate experimental and control groups, with the experimental subjects receiving the planned teaching before discharge. Through home visit interviews with all subjects, the mothers' coping abilities were assessed by the number of specified care objectives they had achieved. The individual totals were ranked and analyzed using the Mann-Whitney U test, the results of which led to the rejection of the Null hypothesis with \( p = .001 \), thus indicating a greater ability to cope by the mothers receiving the planned teaching. The total achievement scores of each objective were analyzed using the Fisher Exact Probability Test, resulting in five of the twenty objectives achieving significance at the .05 level. As four of the control subjects received routine written instructions before discharge from one hospital, the evaluation scores of these were compared with the remaining control subjects using the Mann-Whitney U test. No significant difference was found suggesting the ineffectiveness of written instructions without explanatory verbal instructions as well. Selected personal characteristics of the subjects and their children provided a description of the study population.

The study's findings suggested that there is a lack of planned patient teaching in emergency departments although literature sources indicate that such teaching is necessary if patients and their families are to assume full responsibility.
for their own care.

The study recommends that nurse practitioners be made aware of their teaching function and be encouraged to achieve competence and confidence in this function through inservice programs.
ACKNOWLEDGEMENT

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CHAPTER I

INTRODUCTION TO THE STUDY

INTRODUCTION

The teaching of patients and their families is an integral part of total comprehensive patient care and therefore a significant component of professional nursing practice. Through her teaching activities, the nurse practitioner does not serve as a substitute for the physician, but rather enhances his effectiveness in making for more truly comprehensive care than could be realized by the physician working alone.1 As teacher, the nurse practitioner interprets to patients and their families facts basic to the achievement, maintenance, and promotion of health with the expectation that these facts will be applied in the home situation. Continuity of care can be achieved effectively only through various aspects of communication, goal-setting, teaching, and coordination of health services. In addition, planned follow-up care will provide for "better utilization of time and personnel, consistent instructions to family members, and

measures for determining the effectiveness of health team actions."

When a child becomes ill, the involvement of his parents in the treatment and care activities is of crucial importance. Admission to hospital frequently becomes a crisis situation not only for the child, but for the parents as well, producing anxiety which may interfere with their ability to give adequate support to the child, while at the same time transmitting this anxiety to the child. For parents who must bring their child to an emergency department because of an accident, the unexpected treatments and procedures can easily enhance the feelings of anxiety and confusion which both parents and child may experience in trying to adjust to the situation. Meanwhile they are often compelled to wait for varying lengths of time in an emergency service environment which often appears rushed, impersonal, and uncaring to many of its clientele.

It is notable that within the space of a few short hours, an accident can occur, treatment given by one or a variety of unfamiliar professionals followed by the discharge home. At that point, the child is no longer a patient of the

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hospital but of his parents who become the health care-takers, unexpectedly faced with the responsibility of caring for a child who, had the decision by the medical staff been to admit the child to hospital, would still be a hospital patient. Instead he goes home, thus fortunately avoiding the psychological trauma associated with prolonged hospitalization. The need to prepare mothers adequately for the care they are expected to provide after such short-term treatment is the concern of this study.

THE PROBLEM

Statement of the Problem

It is the expressed opinion of a sociologist, Robert Bell, that the mother is often the intermediary between the impersonal, rational decisions of the medical expert and the application of those decisions within the highly emotional context of intra-family relationships. The purpose of this study was to determine whether or not planned teaching involving verbal and written instructions, given to a mother prior to the discharge of her child from a hospital emergency department following treatment for a traumatic limb fracture requiring cast application, enables her to cope more adequately

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with the home care of the child than the mother not receiving this planned teaching.

Specific Objectives of the Study

The objectives of this study were to:

1. provide each mother of the experimental group with knowledge concerning the management of her child's care at home.

2. evaluate the abilities of the mothers of the experimental group to cope with the home care, based on their comprehension of the specific instructions given previous to discharge.

3. evaluate the abilities of the mothers of the control group to cope with the home care.

Significance of the Problem

The focus of this study was on the education of the mother in the care activities required by her child after discharge from a hospital emergency department. In her brief experience as a staff nurse in both pediatric and emergency settings, the writer observed that discharge instructions were generally considered to be the responsibility of the physician, possibly supplemented by the nurse's responses to questions which either the patient or accompanying family member would be perceptive enough or daring enough to ask. No specific opportunity was provided for discussion with these persons about what treatment had been given, the expected
results of that treatment, or how to observe for and manage possible complications.

Studies have indicated that a hospitalization period of short duration, of a child at any age, can prove to be a very traumatic experience. In addition, ideas about injury or immobilization can be misinterpreted and/or misconceptualized by the child, resulting in stresses with which he may not be able to cope adequately. This will affect both


his physical recovery as well as his everyday behavior, and his mother, who is unfamiliar with having a temporarily disabled child to care for, is expected to adapt appropriately but without receiving adequate instructions and follow-up. In actual fact, this adapting may be a near impossibility. Little and Carnevali state that if family members are to assume an active role in the patient’s care, they must know how they can participate appropriately.\textsuperscript{11} Therefore, as the mother will usually assume the prime caretaker role at home, she should be adequately prepared for that role.

In the case of a child, the coping abilities of the parent are as important as those of the child. Both need to be provided with factual information concerning what has occurred and predictions of what will occur, reassurance to maintain optimism and recommendations to provide a sense of control, thus reducing helplessness.\textsuperscript{12} In addition, opportunities for personal expression of fears, uncertainties and anxieties need to be made available in the pre-discharge


period to ensure that both mother and child will be able to cope together in the everyday home situation.

Walker suggests that the hospital's ambulatory services, which include emergency services, provide an excellent opportunity for patient education as the success of the treatment plan in such a situation rests largely with the patient's and his family's understanding of his illness and instructions. Wang and Brayton feel that as ambulatory patients and their families are active participants in the management of their own health, they can either negate the efforts of a well-coordinated plan and render effective care impossible, or they can be encouraged to assume the role of a third partner-manager in both planning and executing the care program, if appropriate teaching and support are made available by prepared and concerned professionals. The point is emphasized by Fells that in emergency services, very little extra time is required to ensure that the patient and accompanying family members


know what has been prescribed, why, and how the care may be administered at home.\textsuperscript{15}

However limited, this time must be well spent and so must include some form of organized activity if it is to produce effective patient education.

As any sound educational venture, patient education must be carefully planned. There should be an analysis of needs and resources. The objectives should be clearly defined and specific to the point that they are realistic and achievable and can be evaluated. The content must be carefully determined and set into a variety of learning experiences that will meet the needs of the patients involved. The methods and materials used should be carefully selected and skillfully used. Finally, a careful evaluation should be made in terms of the objectives in order to measure the results, and if necessary, to make adjustments.\textsuperscript{16}

Thus the need for programs of planned teaching necessary for effective patient care has been indicated, but as yet, scientific investigation and evaluation of such programs in emergency departments are lacking. This investigation of the effectiveness of a teaching program should provide a basis for further studies in this largely unexplored, but increasingly popular, center for short-term patient care.


ASSUMPTION OF THE STUDY

This study was based on the assumption that the care which a mother is expected to give to her child at home following treatment in a hospital's emergency department, is comparable to the nursing care that child would have received had he been admitted to a general hospital ward.

DEFINITIONS OF TERMS USED

To know. The remembering of previously learned information.\(^\text{17}\)

To understand. The individual knows what is being communicated and can make use of the material or idea being communicated.\(^\text{18}\)

To cope. Refers to the ability to apply pertinent knowledge and understanding in managing an unfamiliar situation.

Cast. Refers to a full length or below-the-knee, walking or non-walking, plaster of Paris cast, or a full length or elbow length arm cast.

Post-hospitalization/discharge period. Refers to a five to ten day period after treatment in a hospital emergency department.


\(^{18}\)Ibid., p. 89.
LIMITATIONS OF THE STUDY

The study is subject to the following limitations:

1. No method was used to control the routine discharge procedures given by the staff of the various hospital emergency departments utilized in this study.

2. The potential abilities and attitudes of the mother in handling such a situation were not assessed before the specific information regarding home care was given.

HYPOTHESIS TESTED IN THE STUDY

The Null hypothesis was tested in this study: there is no significant difference in the coping abilities of the mothers of the experimental group as compared with the mothers of the control group.

Overview of the Remainder of the Study

Chapter II is a review of the literature, focusing on illness and hospitalization of children and the role of the nurse in preparing the patient and his family for home care.

Chapter III - describes the methodology used in this study.

Chapter IV - is an analysis of the data gathered.

Chapter V - contains the summary of the findings of the study, the conclusions and implications drawn, and recommendations for further areas for investigation.
CHAPTER II

REVIEW OF THE LITERATURE

In reviewing the literature, there was found to be a lack of studies directly concerned with the teaching of parents or even of patients in general, in emergency department settings. Therefore, indirectly related areas were investigated to provide the bases on which this study was built.

The literature review is discussed under the following headings: the concerns of hospitalized school-aged children and their parents; communication between patients, their families, and the professional health team; and the role of the nurse in patient teaching as a means of effective communication.

THE CONCERNS OF HOSPITALIZED SCHOOL-AGED CHILDREN AND THEIR PARENTS

Parents are the most important people to a young child because they provide him with physical as well as emotional support and nurture. The growing child cannot afford to interrupt the cycle of his living and growth, but when this

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happens as in the event of illness and hospitalization, a child's need for his parents is necessarily increased as he tries to cope with the changes taking place. To a child whose inner resources are already strained by his illness and the strange surroundings of the hospital, misconceptions about the cause of his illness and about the motives of those assigned to his care are an added burden.\textsuperscript{3} Erikson has stated that children of early school years have more capacity to deal with the stress of illness than do younger children, but they are still not able to fully understand their illness or treatment regimen, often masking their concern with aloof behavior and conveying the idea that they know all about it by repeating adult explanations that they do not understand.\textsuperscript{4} How a child perceives his illness and how much factual information he has concerning his illness and its results will directly affect his recovery.

Lederer has theorized that whenever an individual enters an unknown or partially understood situation, he exhibits fairly typical responses and that anxiety is aroused

\textsuperscript{3}C.G. Gips, "The Interpretation and Misinterpretation . . . by Hospitalized School-age Children . . . of Being Sick; Implications for Nursing," \textit{ANA Convention Clinical Sessions, IX} (1965), 13.

because of fantasied dangers and because of unfamiliarity with what one may expect.\textsuperscript{5} This theory can be extended to children as well as to adults.

In a study of the stress of hospitalization on children, Langford found that school-aged children seem bothered when the disease process carries with it a threat of actual impairment of their capacities to compete actively with other children, and that late pre-adolescent youngsters tend to express fears of permanent disability.\textsuperscript{6} From their studies of hospitalized children, Prugh and his associates found that six-to-ten year old children expressed fearful fantasies of mutilation, of broken fingers and losing teeth, of being poisoned, of not getting well, and "obsessive fears of death from illness during sleep."\textsuperscript{7} In addition, Huschka and Ogden found that one of the primary sources of anxiety in the young child is the sense of helplessness he experiences when there is physical interference with his activity.\textsuperscript{8} More recently, Sibylle Escalona has reaffirmed this idea, stating that for

\begin{itemize}
\item \textsuperscript{6}W.S. Langford, "The Child in the Pediatric Hospital: Adaptation to Illness and Hospitalization," American Journal of Orthopsychiatry, XXXI (1961), 672.
\item \textsuperscript{8}M. Huschka and O. Ogden, "The Conduct of a Pediatric Prophylaxis Clinic," Journal of Pediatrics, XII (1938), 794-800.
\end{itemize}
school-aged children, bodily injury or defect still carries a very personal meaning. This is understandable as bodily competence and integrity are prime sources of a sense of self and self-esteem at this stage of development.\(^9\)

In her descriptive case studies of a number of hospitalized children, Green stated that as parents provide physical as well as emotional support and nurture, a child learns to adjust to life and react to its stresses as a result of the basic and continuing interactions with his family. However, the anxiety produced when parents cannot meet their own needs prevents successful giving of themselves and this is communicated to the child, thus increasing his inability to cope with his difficulties.\(^{10}\)

Blom's study of the reactions of hospitalized children to illness evidenced that reactions to this situation are determined by the nature and degree of stress from both realistic and unconscious sources and the balance of these sources within the child, his parents, and the hospital environment which will either facilitate or impede adaptation. His study of how two to fourteen year olds reacted to brief hospitalization and a minor operation, indicated that adequate adjustment was related to the dominance of realistic information concerning the illness and the proposed treatment.\(^{11}\)


\(^{10}\)Green, op. cit., p. 5.
Mahaffey undertook an experimental study to investigate the possibility of improving the hospital care for children by involving the child's mother within the recognized limits of her capabilities. The results showed a positive correlation between the actions of the nurse with the experimental group and better adjustment at home following discharge.\textsuperscript{12} Gofman et al. concluded in their studies that the emotional trauma of hospital experience may be prevented by adequate parent-child relationships and proper preparation of both the parents and the child for admission, hospitalization and discharge.\textsuperscript{13} These same researchers conducted a study in which one hundred parents were interviewed at the time of their child's admission to hospital and sixty-eight parents were interviewed on discharge of their child, for the purpose of ascertaining their reactions to admission, hospitalization and discharge, as well their own and their child's preparation, their feelings and understanding about his illness.\textsuperscript{14} They


found that many parents not only wanted information and time to prepare their child for hospitalization, but also wanted the physician to help in this preparation. Forty-seven of the parents expressed fear of the unknown as being the most bewildering factor—not knowing what was wrong or what to expect. When asked if they felt they had received the information necessary for further care of the child at home, eighteen parents felt they had not received it, stating that the doctor seemed too rushed or they were so excited they forgot to ask questions, or else they were too upset by the diagnosis to listen. Several volunteered that they would have appreciated written instructions to which they could refer at home.

In an analysis of interviews with parents of children attending a rheumatic fever clinic, two-thirds of the parents stated that no one had ever discussed the child's illness with them in clinic. The analysis indicated that the parents' understanding of several cardinal aspects of rheumatic fever and its treatment was generally confused, vague, and distorted by misconceptions and unrealistic beliefs. Most important, the evidence showed that almost none of these mothers had talked with her child about his disease and so was completely unaware of what he knew.\(^\text{15}\)

It is apparent then, that in illness situations, stress is aroused within the child and his parents by concern with the unknown, the unfamiliar, and the lack of information about treatments, procedures, and general care. Skipper and Leonard, in a study relating the stress of the child with that of the mother asserted that by establishing a relationship with the mother of an ill child and providing her with pertinent information, an authoritative figure may reduce her stress, thus allowing her to make a more rational adaptation to the child's problems and thereby facilitating her active role in his care. They hypothesize that this positive behavior on the part of the mother will have a profound effect on that of the child. Similarly, Pratt, in a study of a child with a long-term illness, stressed the need for a liaison person to communicate and reinterpret information among family, child and professional staff. Eichhorn sees this role being filled by the nurse since she is the one person who remains constant, to whom patients and family can relate.


COMMUNICATION BETWEEN PATIENTS, THEIR FAMILIES
AND THE PROFESSIONAL HEALTH TEAM

Scott Simmonds has written: "If individuals are to participate effectively in their own treatment and rehabilitation programs, it is obvious that they must know and understand what to do and how to do it, as well as be sufficiently motivated to take action." With the increasing trend of relying on home care as a major part of the medical treatment plan, especially for ambulatory patients, there must be a common agreement between the health care team and the patient or family member as to what the latter needs and wants to know to participate effectively in this plan, as well as how and by whom this knowledge is to be provided. Without this agreement, confusion and inefficiency will persist in hampering effective care.

In studies completed by Pratt and her associates on problems of communication between patients and physicians in a medical outpatient clinic, it was found that patients gave little evidence of conscious, aggressive demand for information

19 Scott K. Simonds, "Health Education and Medical Care: Focus on the Patient," Health Education Monographs, 16 (1963), p. 34.

about their condition from the physician, although there appeared to be an unformulated latent desire for more information among the majority. Physicians who seriously underestimated the patient's knowledge were less likely to discuss the illness at any length with the patient than were those physicians who did not seriously underestimate the patient's knowledge. Patients who were given more thorough explanations were found to participate somewhat more effectively with the physician and were more likely to accept completely the doctor's formulation than were patients who received very little explanation.

It seems that patients do not always receive the information they need or want despite its recognized importance. Dodge conducted an exploratory study to determine what information patients really want and the way in which doctors' and nurses' attitudes toward giving this information differed from those of their patients. Data were collected through interviews at two voluntary teaching hospitals, and were statistically analyzed to determine the nature and extent of the differences among the three groups interviewed—patients, nurses and doctors—on their attitudes toward the importance of keeping patients informed. Attitudes were inferred from

21 Joan S. Dodge, "How Much Should the Patient Be Told—And By Whom?" Hospitals XXXVII (December 16, 1963), 66-76, 125.
responses to a set of questions designed to measure how important the respondents felt it was that nurses and doctors perform certain acts associated with giving good patient care. Physicians, nurses and patients differed in their attitudes concerning what patients should be told, with the tendency for doctors' communication functions being seen by all groups as more important than those of the nurses. The data also strongly indicated that patients do not always receive the information they want, for unless the doctor sees this information as being important, it is relatively unlikely it will be communicated by him or that he would encourage or permit the nurse to provide it.

While Dodge's study concentrated on patient's needs for information regarding his care in hospital. Alt investigated the preparedness of patients on discharge, seeking to find out what the patient wanted to know. The nurse participant in this same study, Dorothy Linehan, stated the study's premise as being that, on discharge from hospital, patients and their families have questions that often go unanswered, that many could be answered, and that if they were answered, the patient's recovery would be hastened, his mind eased, and his opinion of the hospital and health professionals

enhanced. Over an eight month period, four hundred and fifty patients in one teaching hospital were interviewed at the time of discharge. An interview schedule was developed in which twenty questions related to the patient's social, ethnic and educational background, five were concerned with questions the patient might have had on admission, and nineteen with the patient's questions and thoughts on discharge. An indication of some of the findings included the following:

- 51.2 percent had one or more questions on admission
- 49 percent had one or more questions on discharge that were unanswered
- 65 percent said they were given no specific instructions about their care after discharge
- 64 percent said they were given no time for instruction
- 35 percent said they had a question they wished they had asked their doctor.

To obtain answers to unasked questions, 61 percent said they would phone the doctor after they got home; 16 percent would make an appointment with the doctor to ask the question; and 3 percent said they would wait until their next scheduled appointment. Of particular note was that 33 percent made

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suggestions as to how to improve the method in which patients can get their question answered.

As a result of this study, a new program to plan for discharge was developed with representatives of all facets of the health team participating. In addition, patient teaching was incorporated into inservice and ward teaching programs. In conclusion, Alt suggests the creation of a "discharge office" where the patient could receive instructions involving home care as well as have any questions answered.

Simonds stresses the point that "understanding and acceptance of medical advice is crucial to the success of a patient's treatment, and Wooden contends, "Patient education and patient care are inseparable." It seems then, that if the patient is not provided with information he needs and wants to care independently for himself, he cannot be considered to have been adequately treated even though he is "well enough" to be discharged from hospital. As Alt has stated:

24 Simonds, loc. cit.

If physicians and nurses in hospitals have a duty to exercise fully the restorative function of the health team and to return the patient to society, to his family, to his job with a minimum of uncertainty and fear, their responsibilities do not end at the hospital door. We are letting the patient dangle in uncertainty because of a lack in patient education. 26

The literature reviewed thus far seems to expose the lack of common understanding among doctors, nurses, and patients and family members as to what information is necessary before an individual can participate in the restorative phase of his illness. Once the discrepancies are made apparent, planning can be initiated for teaching-learning situations that will enable the patient and his family to manage care at home without having to cope with unnecessary, real or imaginary stresses that ignorance can create. In this way, continuity of care would be a reality.

THE ROLE OF THE NURSE IN PATIENT TEACHING AS AN EFFECTIVE MEANS OF COMMUNICATION

The teaching of patients is recognized as an integral part of professional nursing practice. 27, 28, 29, 30 However,

26 Alt, op. cit., pp. 76-77.


studies in patient teaching in nursing are still relatively scarce.

Pohl describes the teaching function of the nursing practitioner as consisting of:

A system of actions, intended to induce learning, which provides activities, materials, and guidance in informal and formal situations; it includes both the activities of communication and the activities of structured teaching; it is directed toward assisting the learner to achieve his potential: the patient for self-direction, the co-workers for the improvement of patient care. 31

This definition was a conclusion drawn from a study in which the purpose was to describe, clarify, and define the limits for the nurse practitioner's teaching role, and its implications for nursing education. 32 Her questionnaire was completed by fifteen hundred nurses employed in various settings throughout the United States. The findings indicated a general lack of clarity in the concept of teaching with ideas ranging from limited formal classroom instruction to any activity by which an individual learns. Pohl feels that this indicates a marked lack of preparation in patient teaching, that although many practitioners recognize the importance of this role, they don't have a clear concept of what it entails.

30 Margaret L. Pohl, "Teaching Activities of the Nursing Practitioner," Nursing Research, XIV (Winter, 1965), 11.
31 Ibid.
32 Ibid., pp. 4-11.
She states that a large part of the nurse's teaching can be done at the bedside while giving nursing care, and that this time will be most effectively spent when she has planned her teaching objectives in advance of giving care.

Palm states that:

Although informal teaching at the patient's bedside during daily nursing care is considered most effective and important, nurses tend to view teaching narrowly as formal instruction. This unstructured and incidental teaching is dependent upon the nurse's recognition of the teaching opportunity and the priority which she gives to the teaching function in that particular situation. 33

With this premise, Palm conducted a descriptive survey to determine where nurses place their patient teaching priority. 34 Of 151 medical-surgical nurses working in non-emergency situations, 59 percent assigned top priority to patient education over physical care, supportive emotional care, and liaison activities of the nurse practitioner. However, the study indicated that these nurses tended to explain immediate care to patients and neglected health teaching which prepares the patient for discharge and self-care at home. Less than 25 percent of the subjects gave this area top priority although, as Palm concludes, "Such teaching is most important for the patient's health maintenance." 35

34 Ibid., pp. 669-678.
35 Ibid., p. 676.
An experimental study carried out by Starfield and Sharp investigated the effect of nursing intervention on a family's compliance with a long-term complex regimen prescribed for ambulatory indigent children between the ages of six to thirteen with chronic enuresis. The results of this study clearly indicated a significant difference (p < .01) in the knowledge and responses between the experimental group which received the additional nursing care and the control group which received no extra care. Those families in the experimental group followed instructions better thereby enabling them to carry out treatments with more reliability.

Hallburg describes two approaches to teaching patients self-care. One of these is planning for the patient in which the goal is to give the patient information which the nurse possesses. It is described as largely a one-way approach with little nurse-patient interaction and therefore allows for little inclusion of extraneous variables such as the patient's social or educational background. Evaluation is limited to the goal and therefore provides little really valid information with this approach. Hallburg states, "It

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36 B. Starfield and E. Sharp, "Ambulatory Pediatric Care; The Role of the Nurse," Nursing Research, XVIII (May-June, 1969), 277.

should be noted that there is considerable experimental evidence to suggest that there is no direct relationship between the acquisition of new knowledge and a change in subsequent behavior. She neglects however, to substantiate this statement.

Hallburg's second approach is planning with the patient, based on the assumption that the patient and the nurse are both active participants in the teaching-learning process, thus allowing for consideration of individual and situational variables in planning and carrying out the activity. "The goal of this approach is related more to the patient's subsequent behavior regarding self-care than to the acquisition of specific knowledge and skill." This approach requires more time involvement, with the teaching-learning activities being extended and reinforced over a period of time, e.g. in a number of out-patient clinic visits. An experimental study with 103 elderly clinic patients to test this approach, called a 'decision-making' approach, failed to show statistically significant results but should, as the author suggests, be investigated further.

A comparative investigation by Lindeman and Van Aernam on the effects of structured and unstructured pre-operative teaching of deep breathing, coughing, and bed exercises with

38 Ibid., p. 227.
39 Ibid., p. 228.
surgical patients, concluded that the structured teaching improved the subjects' ability to deep breathe and cough postoperatively and the mean length of hospital stay was significantly reduced, although there was no substantial effect on the third variable investigated—postoperative need for analgesia.40

Packard and Van Ess in an experimental study comparing informal and role-delineated patient on improving food selection behavior of post-partum patients, found a significant difference in pre- and post-teaching scores, indicating the effectiveness of both approaches as compared with a control group. The role-delineated approach showed a significant impact (as opposed to the informal group) on the third day only. Unfortunately, there was no follow-up after discharge on the fourth day.41 Similarly, Cross and Parsons found significant change in the food selection behavior of orthopedic patients who were taught by the nurse in an informal structured situation.42


Patient teaching then can be very informal teaching done incidentally at the patient's bedside or formal and highly structured. In either case, it is "communication especially structured to produce learning." It is a process requiring motivation on the part of the learner, assessment of his learning needs by the nurse, the establishment of obtainable objectives, implementation of teaching, followed by evaluation of learning and teaching. The structure and formality seem to depend on the time limitations of the nurse practitioner and also her preparation and capabilities for teaching a specific group of patients. A great deal depends on the patient as well, for example, whether he is an inpatient or outpatient, the visiting times of family members included in the teaching activities—especially important in the teaching of parents of hospitalized children. In any case, it cannot be haphazard but must be planned.


SUMMARY

This chapter presented a review of the literature. As there have been no systematic investigations of the teaching of parents of children treated in emergency department settings, the literature review focused on related areas. The hospitalization of children was seen to be a stressful and stress-producing situation for both the parents and their child. This stress seems to be enhanced by lack of preparation for home care which exists because of parents' fear of seeking information or ignorance in knowing what or whom to ask. In addition, there seems to be confusion among doctors, nurses, parents and patients in general as to what information is needed before discharge and who should provide it. The nurse practitioner in her role as patient teacher is increasingly being recognized as the health team member who can most effectively and consistently prepare patients and their families for their hospital experiences and for care after discharge. The various approaches to patient teaching, as reported within the literature sources, all recognize the need for the nurse to select the approach which best fits the individual patient situation.
CHAPTER III

THE RESEARCH DESIGN AND DEVELOPMENT OF THE STUDY

DESIGN

Levine has stated that the experimental approach is "... generally considered superior to other forms of research when the objective of the researcher is to find basic relationships (causal patterns) among variables being studied."¹ In addition, Helmstadter has asserted that, as a rigorous approach to the study of cause-effect relationships, the experimental method has "provided results which are lasting over time, which have led to fruitful new studies, and which have suggested more practical applications."² As this study was aimed at evaluating the effectiveness of one nursing intervention utilizing a planned teaching approach as compared with routine hospital procedures, the experimental method of research seemed the most appropriate to use.

¹Eugene Levine, "Experimental Design in Nursing Research," Nursing Research, IX (Fall, 1960), 203.

Dependent Variable

The dependent variable measured in the study was the abilities of each mother to cope with the home care of her child after he had received treatment in the Emergency department for a traumatic limb fracture requiring cast application. This was evaluated through an interview schedule administered in the home during the post-discharge period.

Independent Variable

The independent variable of the study was a planned nursing intervention. Before the child's discharge from hospital, the researcher gave the mothers in the experimental group specific instructions regarding the care of their child at home. Besides being supplied with verbal information, these mothers were provided with a written summarized list of these instructions. Any questions the mothers had were answered and further clarifications were made as necessary. Meanwhile, the mothers in the control group were discharged in the routine manner of that hospital.

SELECTION OF THE STUDY GROUP

The Setting

The subjects were chosen from the population of the Emergency departments of five general hospitals located throughout the Greater Vancouver area. None of these Emergency departments had a planned teaching approach for preparing mothers for the home care of their child with a
new fracture and cast. The instructions that were given varied with the individual doctor or nurse in attendance and the questions asked by the parent before discharge.

However, one of the Emergency departments provides all of its patients who receive a cast with a pamphlet on how to care for the cast at home. The eight subjects obtained from this particular hospital all received this pamphlet, a copy of which is included in Appendix C.

The data were collected in the period between mid-February and the end of May, 1972.

The Subjects

The subjects consisted of twenty mothers who qualified for inclusion in the study because their child met the following criteria:

- was between the ages of six and twelve years;
- had just received a traumatic fracture of a limb requiring the application of a cast;
- had no major injuries other than this limb fracture;
- was not admitted to any ward other than Emergency;
- was living with his mother.

In addition, the mother had to be present with her child in the Emergency department for at least part of the time and of course, be willing to participate in the study. No refusals to participate were encountered.
Subjects fitting these criteria were assigned to alternate groups according to the order in which the child was admitted to the Emergency department in each hospital, i.e. the first qualifying subject was assigned to the experimental group, the next to the control group, etc. If the researcher was unable to be contacted when an experimental subject was available, that subject was not used, but the next subject was still assigned to the control group. A copy of the instruction sheet which was posted in each Emergency department is included in Appendix A. Of necessity, the researcher had to rely on the nursing staff to contact her when an experimental subject was available and to remember to record the names and hospital numbers of control subjects. But in addition, the researcher called these departments at various times to check for the names of control subjects and to remind the staff of the study.

PROCEDURE

The experimental subjects were given specific instructions by the researcher regarding the home care of their child before discharge from the Emergency department. The teaching was done in one session when both the mother and the researcher were available. Usually it occurred while waiting for the doctor to put the cast on after diagnosis or while the child was having his cast applied. Only occasionally was it done after cast application as in most cases the staff was anxious
to discharge the child to make room for other patients and/or the parents were anxious to leave.

The control subjects did not receive these instructions but only those given routinely in each Emergency department.

A home visit was made to each subject in the post-discharge period to evaluate how well the mother was able to cope with the home care.

INSTRUMENTATION

The instruments developed for the study included a Teaching Guide and a List of "Reminders" which were used with the experimental subjects; an Interview Schedule, Evaluation Form of Mothers' Coping Abilities and Personal Data Form, used with all subjects during the home visit; and a Control Group Information Assessment Form, used with the control subjects during the home visit. These forms are contained in Appendix B.

Teaching Guide

This instrument was developed as a guide for the researcher to use in teaching mothers assigned to the experimental group. The general objective was to prepare the mother for caring for her child at home with a newly casted limb by providing her with information to use in coping with the situation.

As the study assumed that the care which a mother is expected to give to her child at home after treatment in a hospital's emergency department is comparable to the nursing
care that child would have received had he been admitted to a general hospital ward, the information included in the teaching guide was similar to that provided in standard nursing textbooks.  

List of "Reminders"

As feelings of stress and urgency can be easily aroused by the unexpected illness and the emergency department environment, the amount of information the mother would retain after the single teaching session is variable. Therefore, a summarized list of the information given, entitled "Reminders to Help You Care for Your Child and His Cast at Home" was provided to each of the mothers in the experimental group to serve as a reference and as a reinforcement of the information given.


The Interview Schedule

The Interview Schedule was developed for use during the home visit made to all subjects within five to ten days after discharge. As it was anticipated that the desired information could be obtained through informal conversation with the mother, the questions were open-ended. More specific questions were included as a follow-up when the mother's responses were too vague to be conclusive.

Evaluation Form of Mother's Coping Abilities

Based on the information obtained with the Interview Schedule, this form recorded whether or not the following specific behavioral objectives were met:

- mother understands the reason for the cast
- mother understands how to care for the cast
- mother understands how to care for the casted limb
- mother understands the signs and symptoms of complications by looking for signs and symptoms and dealing with them appropriately if any are present.

Specific behaviors which were included in the teaching guide were listed under these objectives as a means of measuring whether or not the objective was met.

Control Group Information Assessment

The form, fashioned on the evaluation form, was used with the mothers in the control group to determine what information they had received, from whom they had received it, and
whether or not they were satisfied. The mothers were asked generally about this information with the researcher seeking clarification as necessary. These data were not collected for statistical analysis but for interest and discussion only.

**Personal Data Form**

This form was completed during the home interviews for each of the subjects in the study. This information was used to describe the population studied and to provide the boundaries for possible generalizations to other populations. Included were the age, sex, and race of the child as well as the number of siblings, previous hospitalizations and number of previous casts the child had had. Information pertinent to the mother included her age, marital status, level of education, and employment status outside the home, as well as an indication of her previous experiences with casts and her general health and mobility.

**PILOT STUDY**

The instruments were reviewed by a pediatric nursing specialist and a nurse educator, following which a pilot was conducted on a sample of three for the purposes of revision and clarification. After making a few minor alterations, the instruments were considered ready for use.
STATISTICAL ANALYSIS

After totalling the number of "yes" answers on the consistently applicable items on each subject's evaluation form, the Mann-Whitney U Test tested the Null hypothesis of the study. This particular test has been described as "one of the most powerful of the nonparametric tests, and is a most useful alternative to the parametric t test when the researcher wishes to avoid the t test's assumptions."\(^7\)

In addition, each of the items on the evaluation form was analyzed using the Fisher Exact Probability Test described by Siegel as "an extremely useful nonparametric technique for analyzing discrete data (either nominal or ordinal) when the two independent samples are small in size. It is used when the scores from two independent random samples all fall into one or the other of two mutually exclusive classes."\(^8\)

The minimum significance level was set at \( \alpha \leq 0.05 \).

SUMMARY

This chapter has described the design used in the study, the method of population selection, and the instruments developed for the study. The method of statistical analyses was also described.


\(^8\)Ibid., p. 98.
CHAPTER IV

ANALYSIS OF THE DATA

This chapter is presented in four sections: (1) the selected personal characteristics of the subjects; (2) the test of the study's hypothesis; (3) analysis of the data obtained for each objective; (4) a descriptive summary of the information received by the control group before discharge.

THE STUDY POPULATION

The study population consisted of twenty mothers whose children had received treatment in one of five selected hospital emergency departments for a traumatic limb fracture requiring cast application.

Age. The majority of subjects, nine (45 percent) were between 30-34 years of age. Two subjects (10 percent) were between 25-29 years of age, six (30 percent) were between 35-39 years of age, and the remaining three mothers (15 percent) were forty years of age or over (Table I).
**TABLE I**

PERCENTAGE DISTRIBUTION OF THE MOTHERS BY AGE

<table>
<thead>
<tr>
<th>Age</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-29 years</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>30-34</td>
<td>9</td>
<td>45</td>
</tr>
<tr>
<td>35-39</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>40 or over</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>20</td>
<td>100</td>
</tr>
</tbody>
</table>

**Marital status.** The majority of the mothers, eighteen (90 percent), were married. One was separated and the other was divorced.

**Education.** The highest educational attainment of the mothers is shown in Table II. The largest number, seven (35 percent) had attended high school while four (20 percent) had completed high school. Completion of grade school was the maximum level of formal schooling for one mother (5 percent). Four mothers (20 percent) had completed vocational training after high school. One in this category had completed a business course, two had received diplomas in laboratory technology, and the other was a graduate of a three year diploma program in nursing. The four remaining subjects were university baccalaureate graduates in either education, English, microbiology, or anthropology.
TABLE II

PERCENTAGE DISTRIBUTION OF THE MOTHERS BY HIGHEST EDUCATIONAL ATTAINMENT

<table>
<thead>
<tr>
<th>Highest Educational Attainment</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed grade school</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Attended high school</td>
<td>7</td>
<td>35</td>
</tr>
<tr>
<td>Completed high school</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>Vocational training post high school</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>Completed university</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Employment. The majority of the subjects (65 percent) were not employed outside the home. Two (10 percent) held part-time jobs and the remaining five subjects (25 percent) were employed full-time (Table III).

TABLE III

PERCENTAGE DISTRIBUTION OF THE MOTHERS BY EMPLOYMENT OUTSIDE THE HOME

<table>
<thead>
<tr>
<th>Employment Outside the Home</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>13</td>
<td>65</td>
</tr>
<tr>
<td>Part-time</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Full-time</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
Previous experience with casts. This characteristic included previous experiences the mother had had in caring for herself and/or others with a cast. Twelve subjects (60 percent) had never had such an experience. Three (15 percent) had cared for someone with a cast once before and the same number had done this twice. Two mothers (10 percent) had had this experience more than twice, including the one subject who was a nurse. (Table IV).

TABLE IV

PERCENTAGE DISTRIBUTION OF THE MOTHERS BY PREVIOUS EXPERIENCES WITH CASTS

<table>
<thead>
<tr>
<th>Previous experiences with casts</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>12</td>
<td>60</td>
</tr>
<tr>
<td>Once</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>Twice</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>More than twice</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>20</td>
<td>100</td>
</tr>
</tbody>
</table>

General health and mobility. All of the mothers appeared generally healthy with no impairment to their mobility. However one of the mothers was almost totally deaf but this was not considered to be an impairment to her health or mobility.

The children. The children involved with the study ranged in age from six to twelve years as shown in Table V,
with the largest number, seven (35 percent) being eleven years of age. The mean age was 9.4 years.

TABLE V

PERCENTAGE DISTRIBUTION OF THE CHILDREN BY AGE

<table>
<thead>
<tr>
<th>Age</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 years</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>10</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>11</td>
<td>7</td>
<td>35</td>
</tr>
<tr>
<td>12</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100</td>
</tr>
</tbody>
</table>

Mean = 9.4 years

There was an equal number of male and female children and all were Caucasian. There was one sibling in the families of eight of the children (40 percent), while nine (45 percent) had two or three brothers and sisters. The remaining three (15 percent) had four to five siblings.

Ten of the children (50 percent) had never been hospitalized overnight, while six (30 percent) had had such an experience once, and the remaining four (20 percent), twice before (Table VI).
### TABLE VI

PERCENTAGE DISTRIBUTION OF THE CHILDREN BY NUMBER OF PREVIOUS HOSPITALIZATIONS

<table>
<thead>
<tr>
<th>Number of Previous Hospitalizations</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>20</td>
<td>100</td>
</tr>
</tbody>
</table>

The majority of children (70 percent) had never had a cast before, four (20 percent) had had a cast once before, and two children (10 percent), twice before (Table VII).

### TABLE VII

PERCENTAGE DISTRIBUTION OF THE CHILDREN BY NUMBER OF PREVIOUS CASTS

<table>
<thead>
<tr>
<th>Number of Previous Casts</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>14</td>
<td>70</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>20</td>
<td>100</td>
</tr>
</tbody>
</table>
EVALUATION OF THE MOTHERS' COPING ABILITIES

Hypothesis: there is no significant difference in the coping abilities of the mothers of the experimental group as compared with the mothers of the control group.

The measure of the mothers' coping abilities was dependent on the number of objectives for caring for a child with a casted limb that each mother met. The mother's score was determined by totalling the number of "yes" answers to the consistently applicable items on the "Evaluation of Mother's Coping Abilities" form. Items were excluded from the tally if they were marked non-applicable for any of the subjects as they had to apply to all subjects in order to be included in the statistical analysis. Those items excluded were numbered on the Evaluation form as 2d, 3e, 4f, 4h, and 4k. In addition, only one positive answer of 4a and 4b, and one of 4c and 4d were counted as only one was considered necessary for meeting the objectives.

The highest possible score was fifteen, indicating a high ability to cope. The total scores are tabulated in Table VIII.
TABLE VIII

RANKED SCORES OF THE COPING ABILITIES OF EACH INDIVIDUAL MOTHER

<table>
<thead>
<tr>
<th>Group</th>
<th>Ranked Scores Within Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>12 12 13 13 13 14 14 14 15</td>
</tr>
<tr>
<td>Control</td>
<td>8 8 8 9 10 10 10 11 11</td>
</tr>
</tbody>
</table>

When the Mann-Whitney U test was applied to the total scores, the U value was found to be significant at $\alpha = .001$. Thus, the Null hypothesis was rejected with confidence, indicating that the mother's abilities to cope with the home care of her child following treatment in a hospital emergency department, because of a traumatic limb fracture requiring cast application, was strongly affected by the teaching she received before taking her child home.

ANALYSIS OF EVALUATION FORM ITEMS

Although the Null hypothesis was rejected after analyzing the overall coping abilities of the subjects, an individual analysis of the scores of each objective was made to determine whether the two groups differed significantly in the proportion with which they were classified as meeting or not meeting each objective.

The scores for each objective were tabulated as shown in Table X. They were then represented as frequencies in a
2 x 2 contingency table, a model of which is presented in Table IX.

### TABLE IX

**MODEL OF 2 x 2 CONTINGENCY TABLE**

<table>
<thead>
<tr>
<th>Satisfactory Achievement Of Objectives</th>
<th>Group</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Experimental</td>
<td>Control</td>
</tr>
<tr>
<td>Yes</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>No</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>Total</td>
<td>A + C</td>
<td>B + D</td>
</tr>
</tbody>
</table>

The Fischer Exact Probability Test was used to determine the significance levels according to the method described by Siegel.  

---

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Experimental</th>
<th></th>
<th></th>
<th>Control</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>yes</td>
<td>no</td>
<td>n/a</td>
<td>yes</td>
<td>no</td>
<td>n/a</td>
</tr>
<tr>
<td>Understands reason for cast</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>a Handles wet cast with palms of hands</td>
<td>7</td>
<td>3</td>
<td>-</td>
<td>1</td>
<td>9</td>
<td>-</td>
</tr>
<tr>
<td>Keeps cast as dry as possible</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>8</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Keeps cast as intact as possible</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cares appropriately for damaged cast</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td>-</td>
<td>-</td>
<td>10</td>
</tr>
<tr>
<td>Keeps cast edges smooth</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>9</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Seeks to keep limb properly supported</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>9</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Allows child amount of activity permitted by the doctor</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>b Cleans and maintains the exposed parts of the limb under cast edges</td>
<td>8</td>
<td>2</td>
<td>-</td>
<td>1</td>
<td>9</td>
<td>-</td>
</tr>
<tr>
<td>c Discourages child from placing objects inside the cast</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>5</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>Encourages child to use crutches properly</td>
<td>2</td>
<td>-</td>
<td>8</td>
<td>2</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Has compared the sizes of both limbs to determine the presence of edema</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Has looked for pallor and/or cyanosis of skin surrounding or distal to</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>cast</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Has felt temperature of skin surrounding and/or distal to casted area</td>
<td>3</td>
<td>7</td>
<td>-</td>
<td>3</td>
<td>7</td>
<td>-</td>
</tr>
<tr>
<td>Has cared for circulatory problems appropriately</td>
<td>4</td>
<td>-</td>
<td>6</td>
<td>4</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>d Has questioned child re: numbness and/or tingling of affected limb</td>
<td>8</td>
<td>2</td>
<td>-</td>
<td>3</td>
<td>7</td>
<td>-</td>
</tr>
<tr>
<td>Has cared for nerve transmission problems appropriately</td>
<td>2</td>
<td>-</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Has smelled the cast for foul odors</td>
<td>8</td>
<td>2</td>
<td>-</td>
<td>5</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>b Has questioned child re: burning, pain and/or moisture under cast</td>
<td>9</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>9</td>
<td>-</td>
</tr>
<tr>
<td>Has cared appropriately for signs of pressure sores under cast</td>
<td>-</td>
<td>-</td>
<td>10</td>
<td>-</td>
<td>1</td>
<td>10</td>
</tr>
</tbody>
</table>

a Significant at p = .01
b Significant at p = .005
c Significant at p = .025
d Significant at p = .05
Understanding the Reason for the Cast

All the mothers expressed a basic understanding of the reason why the cast was necessary, i.e. to keep the ends of the broken bone approximated for re-growth. At the time of the home visit, several control subjects questioned the length of the cast, e.g. the need for a long-leg cast for a fractured tibia. As the post-discharge visit was usually made before the first return visit to the doctor, some control subjects wondered about the length of time the cast had to be on. Explanations regarding these aspects had been given to the experimental subjects before discharge and so their queries were mainly to seek clarification of their doubts.

Understanding Cast Care

There were five specific objectives listed under "Mother understands how to care for the cast."

All subjects sought to prevent the cast from getting broken and ninety percent took measures to prevent the cast from getting wet, including the ten experimental subjects. Such measures included covering the cast with a plastic bag before taking a bath or a shower and giving the child a plastic bag to have in school in the event of unexpected rain. All mothers except one control had kept a check on the cast edges and repaired them as necessary. The experimental subjects used the advice given by the researcher while some control subjects tended to use such materials as facial tissues, and
others, reporting that the edges were just beginning to roughen, were unsure of what to use for repair. There were no statistically significant differences in the separate analyses of the three objectives.

Seven experimental and nine control subjects did not, a statistically significant difference at the .01 level.

A damaged cast was encountered by only two subjects, both experimental. One handled the situation appropriately by calling her doctor immediately. The other decided to wait until the scheduled doctor's appointment when she should have notified him immediately as the cast had softened, possibly affecting bone alignment.

**Understanding of Care for a Casted Limb**

Ninety-five percent of the subjects sought to keep the limb properly supported, e.g. the child kept the limb elevated on a pillow at night and when sitting watching television or reading. This category also included proper use of a sling. The one control subject who neglected this aspect of care did not realize that a sling was necessary as she said she had not been told about it nor did her child receive one before discharge.

Five of the children had fractured lower limbs and so required crutches. Four of these were using crutches properly and one (of the control group) was not. This child was using the armpits as the main point of support.
All subjects permitted their children the amount of activity recommended by the doctor. There were no statistically significant differences in the achievement of the three objectives so far discussed in this section.

Eight experimental subjects and one control cared for the exposed areas under the cast edges. This included washing and rubbing the area at regular intervals. The remaining subjects neglected this aspect of care, resulting in a statistically significant difference at the .005 level.

All ten of the experimental and five of the control group discouraged the child from placing objects inside the cast; five control mothers did not, a frequent comment being "I hope he hasn't," but they had not instructed the child not to. Analysis showed a statistically significant difference at the .025 level.

Understanding of Signs and Symptoms of Complications

This category was intended to determine if the mother kept a knowledgeable check for the signs and symptoms of possible complications and consequently dealt appropriately with the complications if present. Such actions on her part were expected to alleviate unnecessary calls to the doctor as well as provide more immediate relief for the child.

In looking for signs and symptoms of circulation impairment and swelling, all the mothers reported comparing limb sizes and noting limb discoloration as the methods used.
Only one experimental subject reported that she depressed the surrounding skin areas to determine edema and none volunteered that they used the "blanching" technique. However, as the first two methods are perhaps the most commonly known and easily remembered, their use was considered sufficient in checking for swelling and circulation impairment. Only three of the experimental and three of the control subjects used skin temperature to check for circulation impairment, yielding no statistically significant results.

Circulatory problems that were recognized were apparently caused by swelling. Four in each group dealt with the problem appropriately and one control did not, while the remaining eleven encountered no obvious problems in this regard.

Eight experimental and three control mothers checked for nerve transmission problems by looking for numbness or "tingling" sensations in the affected limb. Statistical analysis of the two groups indicated a significant difference at the .05 level.

Four subjects detected nerve transmission problems. Two experimental and one control mother solved the problem in a similar manner—by elevating the limb to reduce swelling. The remaining mother, a control subject, handled the problem inadequately by not checking for swelling and not calling the doctor until a day later.

In the analysis, no significance was determined between those who did and did not check the cast for foul odors although
there was a significant difference at the .005 level in the number who checked for other signs of pressure sores—burning, persistent pain and/or moisture under the cast.

Signs of pressure sores were present in only one child, of the control group, and it was determined that the mother dealt inappropriately with that problem.

CONTROL GROUP INFORMATION ASSESSMENT

Information Pamphlets

As mentioned previously, one of the emergency departments gave information pamphlets on cast care to each patient who received a cast (Appendix C). To determine if this pamphlet made any significant difference between the control subjects who received it and the control subjects from the other four hospitals, the Mann-Whitney U test was applied to the evaluation scores (Table XI).

TABLE XI

RANKED SCORES OF THE COPING ABILITIES OF CONTROL SUBJECTS RECEIVING PAMPHLET ($N_1$) AND THOSE NOT RECEIVING PAMPHLET ($N_2$)

<table>
<thead>
<tr>
<th>Group</th>
<th>Ranked Scores Within Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>$N_1$</td>
<td>10 10 10 11</td>
</tr>
<tr>
<td>$N_2$</td>
<td>8   8   8   9   10 11</td>
</tr>
</tbody>
</table>
The results gave an observed U value of 7 with p = .176, thus indicating that there was no significant difference in the coping abilities of those control subjects who received the written instructions and those who did not receive the instructions.

Control group with pamphlets. In this group, one mother reported the pamphlet as being her only source of information although she was advised by the doctor regarding analgesics. This mother had assisted the doctor by holding the limb while the cast was being applied and yet she reported that she had refrained from asking any questions as the doctor's manner seemed very rushed and quite brusque as he "ordered" her about which way to hold the limb while the cast was being applied, etc.

Another mother gave the pamphlet as a major source of information and the questions she said she had asked the doctor. The remaining two subjects named the doctor as the source of information regarding the reason for the cast and how much exercise the child was allowed which in both cases involved the amount of weight bearing in crutch walking. The nurse was mentioned as a source of information by only one subject and that was in regard to crutch walking only. The remaining information they reported as having been obtained from the pamphlet which was given to them by the nurse prior to discharge.
These four subjects seemed to have received limited or no information on how to handle a wet cast, how to keep the cast edges smooth, how to maintain the areas under the cast edges, the need to discourage the child from placing objects inside the cast, and how to check for circulation impairment by feeling the skin temperature near the cast edges.

Control group without pamphlets. For two subjects in this group, the doctor was reported as the only source of information before discharge and that was for clarification of the reason for the cast only. Neither mother reported having received any further information from the emergency department staff. On arriving home, one called her sister who is a nurse and was advised by her on how to care for the child. This mother felt very strongly that the hospital should provide all such patients with a list of written instructions on how to care for a cast. The other mother reported calling the doctor the following day with her call being answered the day following that, and was told then what to do for the child's apparently swollen, occasionally cyanosed and painful limb. Neither of these children had received slings for their arm casts prior to discharge.

One subject reported receiving information from the doctor regarding the reason for the cast and the need to keep it dry. This mother stated that she would have appreciated receiving more information before discharge, but any problems she did have she referred to her husband who had had a Saint John's Ambulance course.
With the remaining three subjects, the doctors provided each with information regarding the need for the cast, how to support the casted limb and information regarding signs of circulation impairment—swelling, cyanosis, and alteration in the skin temperature surrounding the cast. The mothers reported having received no other information from the Emergency department staff. One child required crutches which had to be obtained by the parents at an outside drug store. Instructions in the use of the crutches was provided by the druggist and not by any of the Emergency department staff, according to the mother.

Table XII lists the items of the Control Group Information Assessment and the numbers within the two control groups who received information prior to discharge.

SUMMARY

Data regarding the selected personal characteristics of the study population were described. Data collected to test the study's hypothesis were statistically analyzed and the Null hypothesis was consequently rejected indicating a greater ability to cope by the mothers of the experimental group. An individual analysis in relation to each evaluating objective was made to determine on which objectives the groups differed significantly. The subjects were found to differ significantly on five out of twenty objectives.
### TABLE XII

CONTROL SUBJECTS RECEIVING INFORMATION REGARDING SPECIFIC ASPECTS OF HOME CARE PRIOR TO DISCHARGE

<table>
<thead>
<tr>
<th>Information On Home Care</th>
<th>Number Receiving Information</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Subjects with Pamphlets N = 4</td>
</tr>
<tr>
<td>Clarification of reason for cast</td>
<td>4</td>
</tr>
<tr>
<td>How to handle a wet cast</td>
<td>1</td>
</tr>
<tr>
<td>How to keep cast dry</td>
<td>2</td>
</tr>
<tr>
<td>How to prevent breakage</td>
<td>3</td>
</tr>
<tr>
<td>How to care for a damaged cast</td>
<td>3</td>
</tr>
<tr>
<td>How to keep cast edges smooth</td>
<td>-</td>
</tr>
<tr>
<td>How to exercise casted limb</td>
<td>3</td>
</tr>
<tr>
<td>How to support casted limb</td>
<td>4</td>
</tr>
<tr>
<td>How to use auxiliary devices</td>
<td>3</td>
</tr>
<tr>
<td>How to clean and maintain exposed parts of limb under cast</td>
<td>-</td>
</tr>
<tr>
<td>Need to discourage child from placing objects inside cast</td>
<td>-</td>
</tr>
<tr>
<td>Information on signs and symptoms of complications:</td>
<td></td>
</tr>
<tr>
<td>- edema in affected limb</td>
<td>4</td>
</tr>
<tr>
<td>- pallor and/or cyanosis of limb</td>
<td>4</td>
</tr>
<tr>
<td>- coldness in skin temperature around cast</td>
<td>1</td>
</tr>
<tr>
<td>- numbness and/or tingling of limb</td>
<td>4</td>
</tr>
<tr>
<td>- foul odors from under cast</td>
<td>4</td>
</tr>
<tr>
<td>- subjective presence of burning, pain and/or moisture under cast</td>
<td>3</td>
</tr>
</tbody>
</table>
Information which the control subjects reported they had received prior to discharge from the Emergency departments was described. In addition, the analysis of the evaluation scores of those control subjects who did and those who did not receive information pamphlets prior to discharge, indicated no statistically significant difference between the two groups.
CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

SUMMARY

The purpose of this experimental study was to determine whether or not planned teaching involving verbal and written instructions given to a mother prior to the discharge of her child from a hospital emergency department following treatment for a traumatic limb fracture requiring cast application, enables her to cope more adequately with the home care of her child than the mother not receiving this planned teaching.

The study assumed that the home care a mother is expected to give in such a situation, is comparable to the nursing care that child would have received had he been admitted to a general hospital ward. The Null hypothesis tested in this study was: there is no significant difference in the coping abilities of the mothers of the experimental as compared with the mothers of the control group. A statistically significant level of .05 was chosen for acceptance or rejection of this hypothesis.

As there is a lack of studies directly concerned with teaching parents of children treated in emergency department settings, the literature review focused on the following related
areas: the concerns of hospitalized school-aged children and their parents, communication between patients, their families, and the professional health team, and the role of the nurse in patient teaching as a means of effective communication. The literature sources indicated a definite need for patient teaching but that its utilization in clinical settings is often confused, scarce, or completely absent. The nurse practitioner was revealed to be the most consistently available health team member to prepare patients and their families effectively for home care after discharge, with the teaching method selected being the most appropriate in relation to the individual situation.

The study population consisted of twenty mothers whose children were treated for a traumatic limb fracture requiring cast application, in one of five hospital emergency departments. The subjects were assigned to alternate experimental and control groups. The experimental subjects were given specific verbal instructions regarding the home care of their children before discharge, plus a list of written reminders. The control subjects were discharged in the routine manner of the Emergency department.

A home visit was made to each subject five to ten days after discharge. Through the administration of an open-ended interview schedule, the mothers' abilities to cope were recorded on an evaluation form. Also, the information received by the control subjects prior to discharge was assessed. In
addition, selected personal characteristics of the subjects were recorded to describe the population.

The Mann-Whitney U Test was used to test the Null hypothesis, resulting in a rejection of this hypothesis. Each individual evaluating objective was analyzed using the Fisher Exact Probability test with the result that the two groups differed significantly in five of the twenty objectives in the proportion with which they were classified as meeting or not meeting each objective.

As four of the control subjects received information pamphlets on cast care at home which were distributed routinely in one of the hospitals, the total scores of these were analyzed with those not receiving the pamphlets. Using the Mann-Whitney U test, no significant difference was found. Also, the information on cast care at home which the control subjects reported they had received prior to discharge, was discussed.

CONCLUSIONS

From the results of this study, the following conclusion is drawn: A mother receiving planned teaching activities is able to cope better with the home care of her child and his cast following treatment in an Emergency department, than the mother not receiving this planned teaching, particularly in the following aspects of care:

- handling the wet cast;
- cleaning and maintaining the visible parts of the limb under the cast;
- discouraging the child from placing objects inside the cast;
- questioning the child to detect signs of nerve transmission problems, i.e. numbness and/or "tingling" of the affected limb;
- questioning the child to detect signs of circulation impairment, i.e. burning, pain, and/or moisture under the cast.

**IMPLICATIONS**

The Emergency department is becoming increasingly concerned with providing care for patients through single, short-term encounters. This service is necessary in order to relieve the over-burdening of already cramped in-patient and out-patient facilities. The limited time available for providing care must be utilized in a way that will promote knowledgeable patient and family participation and cooperation in the care activities after emergency treatment has been administered, i.e. in the home care.

Planned teaching activities are the most appropriate method for preparing the patient and his family for home care. The results of this study suggest that, although the physician is considered to be the source of patient teaching in the emergency setting (perhaps because he is often the last person to see the patient and his family before discharge), he does not appear to be adequately fulfilling this role other than
to provide a few isolated facts. In this study these facts included the reason for the cast and how much exercise the child was allowed. Rather than seek more information from the emergency department staff, some mothers sought advice regarding home care from other than the professional health team. This suggests that patients and their families want information that will enable them to provide knowledgeable, competent care but are reluctant to "bother" the staff with their questions unless encouraged to do so. As the findings of this study suggest, planned teaching activities are noticeably absent in the Emergency department although the need is obvious. The study also suggests that planned teaching involving only written instructions is not necessarily an effective method of teaching unless they are complemented with verbal instructions.

Patient teaching is a recognized function of the nurse practitioner. The results of this study show that the nurse was mentioned only once by the control subjects as being a source of information before discharge other than as the distributor of the information pamphlet to the four subjects concerned. As the abilities of the mothers to cope with the home care after receiving planned verbal and written instructions have been shown to be better than those not receiving these planned instructions, nurse practitioners in these Emergency departments do not appear to be exercising their teaching function. Therefore, the results of this study suggest that,
if patients are to receive care that is comparable to the care they would receive in hospital, there is a definite need for the nurse practitioner to begin exercising her role as patient teacher, serving as a liaison among patient, his family and the professional health team.

RECOMMENDATIONS

From the results of this study, the following recommendations are made:

For Nursing Education:
1. That the role of the nurse practitioner as patient teacher in short-term emergency settings as well as in long-term settings be emphasized in nursing school curricula.
2. That increasing emphasis be placed on interprofessional communication in the education of nurses to prepare them for effective interprofessional practice.

For Nursing Practice:
1. That in-service education programs be carried out for nurse practitioners in the emergency department to assist them in developing their patient teaching function.
2. That a well prepared role model (e.g. nurse clinician) be introduced into the emergency department to serve as a catalyst in the development of patient teaching programs.
3. That a nurse practitioner in the emergency department carry out the role of "discharge nurse," to be consulted before patients are discharged to ensure that the patient and his family are adequately prepared for self-care. This nurse could also serve as a referral point to other agencies.

For Nursing Research:

1. That studies be conducted in emergency departments with various types of patients to determine what patient teaching does take place, who carries out this patient teaching, of what does it consist, how effective it is, etc.

2. That studies of the channels of communication among health professionals in the emergency department be made to assess their effectiveness in regard to patient teaching and to provide indications of means for improvement.
BIBLIOGRAPHY

A. BOOKS


Plank, Emma N. Working with Children in Hospitals. 2nd ed. Chicago: Press of Case Western Reserve University, 1971.


B. PERIODICALS


Dodge, Joan S. "How Much Should the Patient Be Told - And By Whom," *Hospitals*, XXXVII (December 16, 1963), 66-76, 125.


Gips, C.G. "The Interpretation and Misinterpretation... by Hospitalized School-age Children... of Being Sick; Implications for Nursing," ANA Convention Clinical Sessions, IX (1965), 13-20.


Pohl, Margaret L. "Teaching Activities of the Nursing Practitioner," Nursing Research, XIV (Winter, 1965), 4-11.


Simonds, Scott K. "Health Education and Medical Care: Focus on the Patient," Health Education Monographs, 16 (1963), 32-40.


C. CONFERENCE REPORTS


APPENDIX A

INSTRUCTIONS GIVEN TO NURSING STAFF
1. EXPERIMENTAL

CHILD'S NAME:
HOSPITAL NUMBER:
RESEARCHER NOTIFIED:

2. CONTROL

CHILD'S NAME:
HOSPITAL NUMBER:

3. EXPERIMENTAL

CHILD'S NAME:
HOSPITAL NUMBER:
RESEARCHER NOTIFIED:

4. CONTROL

CHILD'S NAME:
HOSPITAL NUMBER:

5. EXPERIMENTAL

CHILD'S NAME:
HOSPITAL NUMBER:
RESEARCHER NOTIFIED:

6. CONTROL

CHILD'S NAME:
HOSPITAL NUMBER:

7. EXPERIMENTAL

CHILD'S NAME:
HOSPITAL NUMBER:
RESEARCHER NOTIFIED:

8. CONTROL

CHILD'S NAME:
HOSPITAL NUMBER:

9. EXPERIMENTAL

CHILD'S NAME:
HOSPITAL NUMBER:
RESEARCHER NOTIFIED:
APPENDIX B

INSTRUMENTS USED IN THE STUDY
Purpose: To prepare the mother for caring at home for her child who has a newly casted limb, by providing her with the following information:

1. Clarification of the reason for the cast.

2. Information on how to care for the cast itself, stressing
   - how to handle a wet cast with the palms of the hands
   - how to keep it dry
   - how to prevent breakage
   - what to do should the cast become wet or broken
   - how to keep the edges of the of the cast smooth.

3. Information on caring for the casted limb, stressing
   - how to exercise the casted limb
   - how to support the casted limb
   - how to use auxiliary devices (slings, crutches)
   - how to clean and maintain the exposed parts of the limb under the cast edges
   - the need to discourage the child from placing objects inside the cast.

4. Information on the signs and symptoms of complications, stressing what to look for, how to test for it, and what to do about it. These signs and symptoms will include:
   - the presence of edema in exposed areas surrounding and/or distal to the cast
   - pallor and/or cyanosis of the skin and nails surrounding and/or distal to the cast
   - coldness in the temperature of the skin surrounding and/or distal to the casted area
   - numbness and/or tingling of the casted area itself or the exposed area distal to it
   - the presence of foul odors from under the cast
   - the subjective presence of burning, pain, and/or moisture under the cast.
REMINDERS TO HELP YOU CARE FOR YOUR CHILD AND HIS CAST AT HOME

1. Handle the wet cast with the palms of the hands, making sure not to use the fingertips.

2. Support the wet cast on pillows when at rest.

3. Keep the leg or arm elevated to prevent swelling which is usually the cause of pain and impaired blood supply.

4. Check for swelling by depressing the skin around the cast, or by comparing the exposed parts of the affected limb with those of the unaffected limb—for example, comparing the foot of the broken leg with that of the "good" leg. If swelling is present, the limb should be elevated.

5. Check for impaired blood supply by
   (a) looking at the color of the surrounding skin area—it should be a normal skin color and not a very pale or bluish color; or
   (b) by pressing a nail in a finger or toe of the limb with the cast—if it returns to a normal pink color quickly, the blood supply is alright, but if it returns slowly, the blood supply is impaired.

   In the case of impairment, check again for swelling.

6. Ask your child if the arm or leg feels tingly. If the answer is yes, check for swelling and check the support (e.g. sling).

7. Smell the cast for foul odors. If these are present, call your doctor immediately.

8. Allow your child to use the arm or leg as much as the doctor permitted.

9. Keep the cast dry. If it becomes soft, wet or broken, notify your doctor.

10. Keep the cast edges smooth with stockinette and/or adhesive tape.

11. Clean under the edges of the cast, dry thoroughly, and rub daily.

12. Discourage your child from putting articles inside the cast.

13. If your child complains of frequent pain under the cast, call your doctor.

IF YOU ARE UNSURE OF ANY SIGN WHICH IS PERSISTENT AND WHICH MIGHT CAUSE YOU TO WORRY, DO NOT HESITATE TO CALL YOUR DOCTOR.
INTERVIEW SCHEDULE

1. Do you understand why X has to wear a cast?

2. How did you handle the wet cast?

3. Have you had any difficulty in caring for the cast?
   (a) Has the cast become wet?
       - If yes: How did this happen?
         What did you do for it?
       - If no: How have you kept it dry?
   (b) Has it become broken?
       - If yes: How did this happen?
         What did you do for it?
       - If no: How have you kept it intact?
   (c) Have you been able to keep the edges smooth?
       How have you done this?

4. (a) What does X do with his leg when he's resting - watching television, for example?
   (b) Is X still wearing a sling?
       If yes: Does he keep his hand inside?
       If no: Why not?

5. Has X had any difficulty using crutches?
   (a) Where does he complain of soreness - his hands, his armpits?

6. How must has X been using his arm/leg?
   (a) Is this as much as the doctor permitted?
   (b) If not, why not?

7. Have you given any special care to the skin under the edges of the cast?
   (a) What have you done?

8. Has X put anything down inside the cast that you are aware of?
   (a) If yes: How did he do it?
       Why did he do it?
   (b) If no: How did you prevent this from happening?

9. Have you checked for signs of complications?
   (a) What were you looking for?
   (b) How did you check for it?
   (c) What did you do about it?

10. Have you had any special problems in taking care of X and his cast?
## EVALUATION FORM OF MOTHER'S COPING ABILITIES

<table>
<thead>
<tr>
<th>BEHAVIORAL OBJECTIVES</th>
<th>Satisfactory Achievement of Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Mother understands the reason for the cast.</strong></td>
<td></td>
</tr>
<tr>
<td>(b) By keeping it as intact as possible</td>
<td></td>
</tr>
<tr>
<td>(c) By keeping it as intact as possible</td>
<td></td>
</tr>
<tr>
<td>(d) By caring appropriately for the damaged cast</td>
<td></td>
</tr>
<tr>
<td>(e) By keeping the cast edges smooth</td>
<td></td>
</tr>
<tr>
<td>(a) By handling the wet cast with the palms of the hands.</td>
<td></td>
</tr>
<tr>
<td>(b) By keeping it as dry as possible</td>
<td></td>
</tr>
<tr>
<td>(c) By keeping it as intact as possible</td>
<td></td>
</tr>
<tr>
<td>(d) By caring appropriately for the damaged cast</td>
<td></td>
</tr>
<tr>
<td>(e) By keeping the cast edges smooth</td>
<td></td>
</tr>
<tr>
<td><strong>2. Mother understands how to care for the cast.</strong></td>
<td></td>
</tr>
<tr>
<td>(a) Has sought to keep the limb properly supported</td>
<td></td>
</tr>
<tr>
<td>(b) Has allowed the child the amount of activity permitted by the doctor</td>
<td></td>
</tr>
<tr>
<td>(c) Has cleaned and maintained the exposed parts of the limb under cast edges</td>
<td></td>
</tr>
<tr>
<td>(d) Has discouraged child from placing objects inside the cast</td>
<td></td>
</tr>
<tr>
<td>(e) Has encouraged child to use crutches properly</td>
<td></td>
</tr>
<tr>
<td><strong>3. Mother understands how to care for the casted limb.</strong></td>
<td></td>
</tr>
<tr>
<td>(a) Has depressed the skin surrounding the cast to determine the presence of edema</td>
<td></td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>(b) Has compared the sizes of both limbs to determine the presence of edema</td>
<td></td>
</tr>
<tr>
<td>(c) Has looked for pallor and/or cyanosis of skin surrounding or distal to the cast</td>
<td></td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>(d) Has carried out &quot;blanching technique</td>
<td>YES</td>
</tr>
<tr>
<td>(e) Has felt the temperature of the skin surrounding and/or distal to the casted area</td>
<td></td>
</tr>
<tr>
<td>(f) Has cared for circulatory problems appropriately</td>
<td></td>
</tr>
<tr>
<td>(g) Has questioned the child re: numbness and/or &quot;tingling&quot; of any part of the affected limb</td>
<td></td>
</tr>
<tr>
<td>(h) Has cared for nerve transmission problems appropriately</td>
<td></td>
</tr>
<tr>
<td>(i) Has smelled the cast for foul odors</td>
<td></td>
</tr>
<tr>
<td>(j) Has questioned the child re: burning, pain, and/or moisture under the cast</td>
<td></td>
</tr>
<tr>
<td>(k) Has cared appropriately for signs of pressure sores under the cast</td>
<td></td>
</tr>
</tbody>
</table>
### CONTROL GROUP INFORMATION ASSESSMENT

<table>
<thead>
<tr>
<th>INFORMATION</th>
<th>Source of Information</th>
<th>Satisfied</th>
<th>No Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Clarification of the reason for the cast.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Information on how to care for the cast itself</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) how to handle a wet cast</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>(b) how to keep it dry</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>(c) how to prevent breakage</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>(d) what to do if the cast becomes wet or broken</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>(e) how to keep the edges of the cast smooth</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>3. Information on caring for the casted limb</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) how to exercise the casted limb</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>(b) how to support the casted limb</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>(c) how to use auxiliary devices</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>(d) how to clean and maintain the exposed parts of limb under cast</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>(e) need to discourage child from placing objects inside cast</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>4. Information on signs and symptoms of complications—what to look for, how to test for it, what to do about it.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) presence of edema in affected limb</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>(b) pallor and/or cyanosis of skin and nails of affected limb</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>(c) coldness in temperature of the skin surrounding cast</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Source of Information</td>
<td>Satisfied</td>
<td>No Information</td>
<td></td>
</tr>
<tr>
<td>----------------------</td>
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<td></td>
</tr>
<tr>
<td>(d) numbness and/or tingling of the casted and surrounding area</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(e) subjective presence of burning, pain, and/or moisture under cast</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PERSONAL DATA FORM

1. Child's age last birthday
   ______ (a) 6 years
   ______ (b) 7 years
   ______ (c) 8 years
   ______ (d) 9 years
   ______ (e) 10 years
   ______ (f) 11 years
   ______ (g) 12 years

2. Child's sex
   ______ (a) male
   ______ (b) female

3. Child's race
   ______ (a) white
   ______ (b) oriental
   ______ (c) other

4. Number of siblings
   ______ (a) none
   ______ (b) 1
   ______ (c) 2–3
   ______ (d) 4–5
   ______ (e) over 5

5. Number of previous hospitalizations of child
   ______ (a) none
   ______ (b) 1
   ______ (c) 2
   ______ (d) more than 2

6. Number of previous casts
   ______ (a) none
   ______ (b) 1
   ______ (c) 2
   ______ (d) more than 2

7. Age of mother
   ______ (a) less than twenty
   ______ (b) 20–24
   ______ (c) 25–29
   ______ (d) 30–34
   ______ (e) 35–39
   ______ (f) 40 or Over
8. Marital status of mother
   ______ (a) single
   ______ (b) married
   ______ (c) widowed
   ______ (d) divorced
   ______ (e) separated

9. Highest education of mother
   ______ (a) attended grade school
   ______ (b) completed grade school
   ______ (c) attended high school
   ______ (d) completed high school
   ______ (e) vocational training in high school
   ______ (f) vocational training post high school
   ______ (g) attended university
   ______ (h) completed university

10. Mother's previous experiences with casts
    ______ (a) none
    ______ (b) once
    ______ (c) twice
    ______ (d) more than twice

11. Apparent general health and mobility of mother
    ______ (a) good
    ______ (b) fair
    ______ (c) poor

12. Employment of mother outside the home
    ______ (a) none
    ______ (b) part-time employment
    ______ (c) full-time employment
APPENDIX C

INFORMATION PAMPHLET ON CAST CARE AT
HOME DISTRIBUTED BY ONE HOSPITAL
This pamphlet is designed to help you to care for your cast at home.

WHAT IS A CAST?

A cast is a rigid dressing composed of gauze bandages impregnated with plaster of paris. The gauze is applied wet so that the hardened cast will conform to the shape of the injured part.

During or shortly after cast application you may have noticed that your cast felt quite warm. This is due to a chemical reaction which occurs in the wet plaster. It will subside in 10 to 20 minutes, depending on the thickness of your cast.

PURPOSE OF A CAST

A cast is applied to an injured part to support and protect it during healing. Handle with care until it has dried completely. This will take an hour or more, depending on its size and thickness.

48 hours - weightbearing

MANAGING A CAST ON A LIMB

Any cast is quite heavy and cumbersome. Because of this, they require extra support. An arm must be supported by a sling when standing or sitting, or by a pillow when sitting. A leg must be elevated on a stool when you sit down. This elevation is to help avoid or decrease swelling of the limb due to 'pooling' of fluid in the tissues.

ACTIVITY WITH A CAST

Your allowed activities will depend greatly on the location of your cast. Regardless of the location of your cast, avoid strenuous or dangerous activities, e.g. skiing, football, as participating in such activities might crack your cast.

If your cast is on a limb you should be able to wiggle the fingers or toes of the involved hand or foot. Do this several times a day. This will help to maintain the circulation and provides some exercise for the involved muscles and tendons.

The length of time your cast stays on depends on the severity of your injury. Your doctor will indicate the approximate time you will need a cast.

POINTS TO REMEMBER

1. Keep your cast dry. If you shower or bath, keep the cast dry. Do not go swimming. A plastic cover will protect it if it is raining or if the street is wet.

2. Keep your cast as clean as possible. A small amount of powdered household cleanser on a damp — Not wet — cloth may be used to clean your cast.

3. Protect your cast. Avoid knocks and bangs that could crack your cast. This could cause a change in the alignment of the involved structures.

4. Protect your toes and fingers from the cold by a cover. A man's sock is a good cover for the toes.

CALL YOUR DOCTOR IF:
- your fingers or toes become numb or discoloured or your cast feels very tight or slides.
- any cracks or breaks in your cast should occur
- your cast has a foul smell, or if there is a discharge on your cast from the tissues under your cast.

If you have any problem with your cast, either your doctor or the staff of the Hospital Emergency Department will be pleased to help you.

***