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A SURVEY OF THE CONDITION OF THE AFFECTED UPPER EXTREMITIES OF HEMIPLEGIC PATIENTS AFTER DISCHARGE FROM HOSPITAL

BY

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(Bachelor of Science in Nursing,
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A field study submitted in partial fulfillment of the
requirements for the Degree of Master of Science
in the School of Nursing
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TABLE OF CONTENTS

CHAPTER		PAGE
I.	INTRODUCTION	
	Statement of Problem	4
	Justification of Problem	4
	Scope and Limitations	5
	Definition of Terms	7
	Preview of Methodology	8
	Sequence of Presentation	8
II.	PHILOSOPHY AND REVIEW OF LITERATURE	9
	Statement of Hypothesis	17
III.	METHODOLOGY	18
	Selection and Description of Sample	
	Tool Used to Collect Data	26
	Procurement of Data	28
IV.	PRESENTATION OF DATA	30
	Findings of Twenty-nine Hemiplegic Patients	30
	Findings of Patients Interviewed for Study	39
V.	SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	
	Summary	56
	Conclusions	58
	Recommendations	60
	BIBLIOGRAPHY	61
	APPENDIX	

TABLES

TABLE		PAGE
I.	Patients Admitted to Hospital in 1957 with Diagnosis of Cerebral Vascular Accident	19
II.	Relationship of Hemiplegic Patients to Physical Therapy Department	21
III.	Composite Picture of Twenty-nine Hemiplegic Patients	31
IV.	Distribution of Twenty-nine Patients by Age and Sex	32
V.	Diagnoses of Patients and Physical Therapy Referrals	33
VI.	Monthly Admissions and Length of Hospitalization	35
VII.	Relationship of Notations in Nurses' Notes and Physical Therapy	36
VIII.	Disposition of Twenty-nine Hemiplegic Patients	37
IX.	Disposition of Hemiplegic Patients in Relation to Physical Therapy	39
X.	Factual Information of Patients Interviewed	40
XI.	Positive Responses to Questions Concerning the Exercise Programs	45
XII.	Responses Concerning Improvement of Affected Arm	46
XIII.	Responses Concerning Movement and Pain of Joints	48
XIV.	Relationship of Physical Therapy to Pain and Limitations of Movement in Affected Shoulders of Hemiplegic Patients	50

TABLE		PAGE
XV.	Relationship of Category of Patient to His Hemiplegia and Hand Preferred	54
XVI.	Relationship of Post-Hospital Condition of Affected Shoulder to Activities of Daily Living	55

FIGURES

FIGURE PAGE

1. Male patients paired according to age and physical therapy 22

2. Female patients paired according to age and physical therapy 22

3. Male patients selected for interview, paired according to age and physical therapy 24

4. Female patients selected for interview, paired according to age and physical therapy 24

5. Male patients interviewed for study 25

6. Female patients interviewed for study 25

CHAPTER I

INTRODUCTION

> "All too frequently in the past, hemiplegic patients have been considered hopeless cripples and relegated to some chronic disease institution or the back bedroom, there to vegetate out their remaining years, bed-bound, helpless, and a burden to themselves and to their families. . . . With proper management, the patient with hemiplegia can look forward with hope to years of useful life. The responsibility for this proper management rests with all the members of the treatment and rehabilitation team."[1]

Statistics show that cerebral vascular accidents rank as the third major cause of death, and yet, the majority of patients sustaining cerebral vascular accidents do not die from the initial attack of the disease. The high incidence of patients surviving their attacks, therefore, results in a yearly influx into our small and large general hospitals of patients suffering cerebral vascular accidents, many of whom have resulting hemiplegias.

Today, with so many advances in modern medicine, the hemiplegic patient can be rehabilitated to lead a useful life. "Experience has shown that with a dynamic rehabilitation approach, the hemiplegic is not a lost cause and that 92 per cent of properly selected patients can be taught ambulation, self-

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[1] New York State Department of Health, Management of the patient with Hemiplegia, p. 30.

care, and urinary and fecal continence in an average of six to eight weeks. In addition, 30 per cent of these can be taught to do gainful work, usually in fields related to previous work experience."[2] "It is indeed fortunate that paralleling the increase in the number of chronic disabilities such as hemiplegia, there has been a growing appreciation of how such patients can be helped when they are managed dynamically and with the knowledge that much can be done to effect their rehabilitation."[3] Most "dynamic rehabilitation" programs that are described in the literature appear to be carried out in general hospitals in our larger cities or in specific rehabilitation hospitals. Little seems to be written about what happens to the hemiplegic patient admitted to a small community hospital.

In many small community hospitals there is now available to the patient some opportunity whereby he may receive the services offered by physical medicine. In some communities, the hospital operates its own physical therapy department, employs full-time physical therapists, and may or may not have a physiatrist on the staff as a consultant; while in other communities, the hospital rents space to a physiatrist who completely directs his own department. In communities where the hospital does not have a physical medicine department, services

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[2] Rusk, Howard A., "Rehabilitation of the Hemiplegic Patient," Therapeutic Notes 62: 284, November 1955.

[3] New York State Department of Health, op. cit., p. 2.

of a physical therapist are usually available through local public health agencies or through employment of therapists on a private basis.

In spite of the availability of physical medicine services to smaller hospitals, some hemiplegic patients are not referred for the services of this branch of medicine and are therefore being discharged from the hospital without the full benefits which modern medicine could offer to them. In hospitals where this occurs, the hemiplegic patients who are denied the physical medicine department services become partially or totally dependent on nursing services to meet their needs in this area. This dependence on nursing service, therefore, places a greater emphasis on the nurse's role in the rehabilitation of these hemiplegic patients.

Working as a Clinical Instructor in a small community hospital, the writer became interested in hemiplegic patients because of the number, who, while in the hospital, began to develop pain in their affected shoulders. Some of the hemiplegic patients were referred to the physical medicine department for exercise therapy; while others were not. From the writer's observation, the nursing personnel did not appear to be involved in the exercise program for the hemiplegic patients.

Considering the development of pain in the affected shoulder of a hemiplegic patient, the writer was led to the question, "Is the pain in any way related to the fact that exercises for the affected arm were not being routinely carried out?". This question led to a further inquiry of the relation-

ship of pain developing in a hemiplegic's affected shoulder to his total rehabilitation.

Statement of Problem

This study is a survey of the condition of the affected upper extremities of hemiplegic patients admitted to one hospital in the year 1957. The aims of the survey were to determine the following:

1. The exercise program, if any, that had been carried out for the affected arm of each patient while he had been hospitalized,
2. The post-hospital condition of the patient's affected arm in relation to joint movement and pain,
3. The post-hospital condition of the patient's affected arm in relation to performing selected activities of daily living.

Justification of Problem

The hemiplegic patient, with his many problems, is familiar to almost every nurse, whether she is associated with a hospital industry, public health, or is at home in her community. Since hemiplegia is a long-term condition, the post-hospital status of the patient is reflective of the quality of care that he received from the onset of his illness.

Statistics show today not only the high numerical occurrence of hemiplegia resulting from cerebral vascular accidents; but also the great number of hemiplegic patients who, when properly cared for, have been rehabilitated to lead useful

lives. Such statistics are and should be of great importance to and influence on today's modern nurse.

The development of pain in the affected shoulder of a hemiplegic patient is generally indicative of the beginning of one of the principal deformities, a frozen shoulder, to which this patient is prone. Experience has shown that this deformity is preventable. Pain in the affected shoulder, therefore, implies that the patient is not receiving the quality of care, especially nursing care, to which he is entitled. This fact alone should be of grave concern to every nurse, regardless of the field of nursing in which she is working.

Because of the prevalence of hemiplegia and the knowledge now available as to the rehabilitation potential of hemiplegic patients, there are many implications in the nursing care of these patients that should interest those involved in the education of graduate and student nurses. It is the writer's opinion that through education, today's philosophy of rehabilitation may be spread. Similarly, in the writer's opinion, in the process of reaching the objectives of a program based on such a philosophy, patient care will ultimately be improved.

Scope and Limitations

The hospital concerned in this study has 285 beds, employs graduate nurses, nurse aides, and orderlies, and has its own school of nursing. Services are provided for private and ward patients in medicine, surgery, pediatrics, and obstetrics. This hospital has its own physical therapy department.

A survey of the hospital records indicated that 116 patients were admitted during the year 1957 with the diagnosis of cerebral vascular accident. Seventy-one of these 116 patients were discharged from the hospital as "improved" and three were discharged as "not improved". An investigation of the hospital records of these seventy-four patients revealed that twenty-nine had hemiplegias resulting from their cerebral vascular accidents. Fourteen of the twenty-nine hemiplegic patients were interviewed for this study.

The hemiplegic patients who had been referred to the physical medicine department for exercise therapy were paired, according to sex and age, with those who had not been referred for any of the services of physical medicine. Those patients to be interviewed were selected from the above grouping. The following variables did not affect the selection:

1. cause of cerebral vascular accident
2. coexisting diseases or conditions
3. motivation or attitudes of the patient
4. socio-economic factors
5. ethnic differences
6. family situations

Each patient was interviewed in reference only to the treatment and condition of his affected upper extremity. The writer did not attempt to evaluate, in any way, the treatment and condition of any patient's lower extremity nor any of the other problems in the rehabilitation of a hemiplegic patient, such as aphasia.

A further limitation of this study is that the doctors and the nursing personnel who cared for any of these patients were not contacted nor interviewed. No attempt was made to evaluate patients according to their hospital accommodations such as ward, semi-private or private.

Definition of Terms

The definitions of terms used in this study are as follows:

1. Activities of daily living or ADL--those activities that the patient must be able to perform for everyday living (i.e. dressing, bathing, eating).
2. Cerebral Vascular Accident or CVA--a condition caused by acute vascular lesions of the brain. This condition is commonly known as a "shock" or a "stroke".
3. Dynamic rehabilitation program--a program in which all the members of the rehabilitation team coordinate their efforts to achieve the maximum rehabilitation of a patient.
4. Exercise--the performance of motion for the maintenance of body function or for the improvement of physical deformity.
    a. Active exercise--that motion performed by the patient.
    b. Passive exercise--that motion performed for the patient without his assistance
5. Frozen shoulder--a deformity of the shoulder in which there is ankylosing of the joint.
6. Hemiplegia--a condition resulting from a cerebral vascular accident in which one side of the body is paralyzed.
7. Physiatrist--a physician who specializes in physical medicine.
8. Physical Medicine--that branch of medicine which employs physical modalities in the diagnosis and treatment of disease. (i.e. heat, cold, light, water, electricity, manipulation, exercise, massage).

9. *Physical therapist*--a person skilled in the use of physical modalities in the diagnosis and treatment of disease.

10. *Physical therapy*--*exercise therapy* (used synonymously in this study)--scientific application of bodily movement designed specifically to maintain or restore normal function to diseased or injured tissue. (P.T.)

11. *Range of motion or ROM*--the extent of movement within a given joint.

12. *Rehabilitation*--the restoration of an individual to the fullest physical, mental, social, vocational, and economic usefulness of which he is capable.

Preview of Methodology

This study was conducted according to the following procedure:

1. Review of hospital records to determine the number of patients admitted to one hospital in the year 1957 with the diagnosis of cerebral vascular accident.

2. Review of patients' hospital records to determine the number of hemiplegias resulting from the above cerebral vascular accidents.

3. Review of hemiplegic patients' hospital records for identifying materials and treatment received as well as progress during hospitalization.

4. Review of physical therapy records.

5. Construction of an interview guide.

6. Interview with a selected sample of hemiplegic patients.

7. Analysis of data.

Sequence of Presentation

Chapter II contains the writer's philosophy and a review of

the literature. This chapter also contains some of the writer's concepts and ideas which led to the investigation of this problem and the basis for the hypothesis.

Chapter III contains the method and tool used to conduct the study.

Chapter IV contains the presentation, analysis, and discussion of the data.

Chapter V contains a summary of the study, the conclusions reached and the author's recommendations.

CHAPTER II

PHILOSOPHY AND REVIEW OF LITERATURE

One might aptly say that the focus of modern medicine is on rehabilitation. In the writer's opinion, rehabilitation has two stages of development--the verbal level and the behavioral level. The verbal level is the discussion of the new concepts of rehabilitation; the behavioral level is the implementation of these concepts into an active program. Some hospitals, through dynamic rehabilitation programs, are operating at the behavioral level; but unfortunately, many small community hospitals have not fully advanced from the verbal level. Occasionally a patient who is admitted to one of the latter hospitals might be deprived of not only his right to receive the best medical treatment that is available, but also his right to maximum restoration of body function.

"Numerically the hemiplegic patient following cerebral vascular accident constitutes the greatest rehabilitation problem in the world."[1] Modern medicine, however, has much to offer to the hemiplegic patient if an attempt is made to meet the objectives of a rehabilitation program.

A survey of the literature indicates that the authors,

[1] Brown, Amy Frances, Medical Nursing, p. 657.

Brown[2], Terry[3], Morrissey[4], and Rusk[5], are in agreement that rehabilitation programs for hemiplegic patients should be started early. As Deaver has stated, "The Hemiplegic Patient, who has had a cerebral vascular accident, as a result of embolism or thrombosis, can usually begin rehabilitation activities a few days after the accident. If the hemiplegia is caused by a hemorrhage, rehabilitation procedures should be limited to bed activities for three weeks."[6]

Both Deaver[7] and Rusk[8] have stated that the objectives of a program of rehabilitation for the hemiplegic patient are (1) to prevent deformities, (2) to treat deformities if they occur, (3) to retrain the patient in ambulation and elevation activities, (4) to teach the patient to perform the activities of daily living and to work with the unaffected arm and hand, (5) to retrain the affected arm and hand to its maximum capacity and (6) to treat facial paralysis and speech difficulties, if present.

The writer believes that every hemiplegic patient has the

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2 Ibid. p. 658.

3 Terry, Florence J., et al., Principles and Techniques of Rehabilitation Nursing, p. 114.

4 Morrissey, Alice B., Rehabilitation Nursing, p. 243.

5 Rusk, op. cit., p. 285.

6 Deaver, George, "The Rehabilitation of the Hemiplegic." Rhode Island Medical Journal, 24:421, August, 1951.

7 Ibid. p. 421.

8 Rusk, op. cit., p. 284.

right to a program of rehabilitation based on the above objectives. This right is inherent in the individual's right to the best medical care that is available. A rehabilitation program based on these objectives, is, in essence, simply applying the principles of modern medicine.

Although the nurse has a major role in the rehabilitation program, she alone cannot adequately carry out the total program This type of program requires the cooperative efforts of all the members of the rehabilitation team. Yet, in many smaller hospitals, the rehabilitation of some of the hemiplegic patients is entirely dependent on the nursing personnel.

A few years ago, the lack of the availability of the services offered by physical medicine accounted, in great part, for many rehabilitable hemiplegics' being neglected in small hospitals.

> "Only rarely can small hospitals afford the services either of a physiatrist or therapist. As a result, the dynamics of physical restoration bog down at the most critical point and time--in the general hospital when medical care is started. Herein, then, begins the descent to chair or bedfastness, culminating in physical degradation."[9]

Since the publication of the above-quoted article in 1956, with the rapid growth and expansion of the field of physical medicine, many small hospitals, as stated in Chapter I, now have the services of this branch of medicine available to them.

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[9] Ferderber, Murray, et al., "The Chronically Ill and Aging--the Physiatrist's Responsibility." Archives of Physical Medicine and Rehabilitation, 37:416, July 1956.

Nevertheless, even where these services are available, some hemiplegic patients are not being referred to the physical medicine department. Some of these patients are, while in the hospital, developing pain and limitation of movement in their affected shoulders. Pain and limitation of movement of the affected shoulder are the first indications of a "frozen shoulder" which is one of the two principal deformities that occurs with hemiplegia. A "frozen shoulder" can usually be prevented by proper management during the acute phase of the disease.

Fazekas and Buchanan, in their study of the relationship of the disease with the rehabilitation potential of the patient, stated, "In the majority of such cases, unless there is extension of the thrombus or associated hemorrhage, an unpredictable degree of spontaneous recovery can be expected."[10] However, they went on further to state, "Unless rehabilitative measures are rapidly instituted, further recovery may not ensue and there may even be a regression of function from inactivity alone."[11] This indicates the need for an active rehabilitation program even when spontaneous recovery of the affected limb occurs.

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[10] Fazekas, Joseph and Josephine Buchanan, "Cerebral Hemodynamics and the Rehabilitation Potential of Patients with Cerebral Vascular Accident," _Archives of Physical Medicine and Rehabilitation_, 37:361, June 1956.

[11] Ibid. p. 361.

In order for an active rehabilitation program to be of benefit to the patient, the principles and techniques of the program must be fully understood and applied by all the personnel caring for the patient. If a program is not practiced, it has no worth. Having these services available to the patient in small hospitals is of no value to him if the services are not being utilized.

In the situation where a hemiplegic patient is not receiving the services of physical medicine, a greater emphasis is placed on the nurse's role in the rehabilitation of the patient; for it is then that the nurse must, to the best of her ability, apply the skills of and substitute for the other members of the rehabilitation team.

Every nurse, today, should know her role in the rehabilitation of a hemiplegic patient.

> "Unfortunately, many nurses are not familiar with the concept of nursing care which is every patient's right today. They do not realize that much of the rehabilitative process is implicit in good nursing care. They are unaware of the fact that properly carrying out a single nursing procedure is tremendously important in the patients' total recovery."[12]

If the services of other team members, such as the physiatrist or physical therapist, are not utilized, the responsibility in meeting the first objective of the program, to prevent deformities, rests solely with the nurse.

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[12] Hartigan, Helen, "Nursing Responsibilities in Rehabilitation," Nursing Outlook, 2: 650, December 1954.

> "If treatment is started early, there will be no limitation of movement at the joints and the affected arm and leg can be passively moved through their normal range. If, however, the patient is not given early rehabilitation, contractures usually result, especially at the shoulder."[13]

It has been the writer's experience that nurses have a tendency to "blame" the development of deformities on the absence of treatment by other rehabilitation team members. This writer feels that the prevention of deformities is implicit in good nursing care, and therefore, in most cases, the absence of treatment by the other rehabilitation team members is no excuse for the development of preventable deformities. This does not temper the fact, however, that no preventable deformities occur if all the members of the rehabilitation team work cooperatively.

Nurses may help to prevent deformities, particularly "frozen shoulder" by the proper positioning of the patient and maintaining normal motion of his shoulder joint. Morrissey[14], Terry[15], and Brown[16], all include active and passive exercises as part of basic nursing care. Deaver states, "Passive movements of the shoulder are useful in increasing the range motion. These movements can be performed by a therapist, nurse, or by the patient."[17]

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[13] Deaver, op. cit., p. 421.

[14] Morrissey, op. cit., p. 245.

[15] Terry, op. cit., p. 85.

[16] Brown, op. cit., p. 655.

[17] Deaver, op. cit., p. 422.

As was stated previously, the nurse alone can not adequately meet all the objectives of the total rehabilitation program for the hemiplegic. The nurse in the small hospital is limited in what she alone may accomplish in attempting to meet the remaining five objectives of the rehabilitation program of hemiplegic patients. Her limitations may be caused by the "time element", "service pressures", and sometimes by her own lack of experience in rehabilitation nursing. Unless the nurse and other team members have the opportunity to work cooperatively, the patient is deprived of care and services that are rightfully his. These limitations, however, do not exonerate her of the responsibility to attempt to meet the remaining objectives of the hemiplegic's rehabilitation program. Even with these limitations in mind, the interested nurse can do much to assist the patient in his rehabilitation. The nurse has an excellent opportunity to teach ambulation techniques, to encourage him to use his affected arm and hand, to teach him to perform his activities of daily living, and if he is aphasic, to encourage the development of language. It is the writer's opinion, that, to the extent that a hemiplegic's rehabilitation program is limited--so also will his level of rehabilitation be limited.

It will be recalled that the aims of this study were to determine:

1. The exercise program, if any, that had been carried out for the affected arm of each patient while he was hospitalized.

2. The post-hospital condition of the patient's affected

arm in relation to joint movement and pain,

3. The post-hospital condition of the patient's affected arm in relation to performing selected activities of daily living. The development of the hypothesis was based on these aims and the writer's philosophy.

Statement of Hypothesis

The hemiplegic patient's rehabilitation level, in reference to his performing some of the activities of daily living, is dependent upon the exercise program carried out on his affected shoulder, arm and hand during his hospitalization.

The hypothesis has been based on the following premises:

The exercise program for a hemiplegic patient has a direct effect on the post-hospital condition of his affected shoulder, arm and hand.

The post-hospital condition of a hemiplegic's shoulder, arm and hand affects his post-hospital rehabilitation status in reference to his performing selected activities of daily living.

Therefore, his exercise program affects the hemiplegic patient's rehabilitation status in reference to his performing selected activities of daily living.

CHAPTER III
METHODOLOGY

The patients concerned in this study were selected from a group of patients who had been admitted to one hospital during the year 1957 with the diagnosis of hemiplegia resulting from cerebral vascular accidents. This hospital is a 285-bed private general hospital located approximately twenty miles outside of Boston, Massachusetts. The hospital is approved by the Joint Commission on Accreditation of Hospitals and has its own school of nursing which is fully accredited by the National League for Nursing. The services of the hospital include medicine, surgery, pediatrics, and obstetrics. Graduate nurses, nurse-aides, and orderlies are employed to assist in the provision of these services. The physical therapy department of the hospital consists of two full-time physical therapists, one part-time physical therapist, and one physical therapy aide. On the staff of the hospital is a physiatrist who acts as a consultant.

A record of all admissions to and discharges from the hospital is kept according to each patient's diagnosis as coded in the _Standard Nomenclature of Diseases and Operations_. Cerebral vascular accidents are recorded by the code numbers corresponding to the cause of the disease. The writer found that in the year 1957, 116 patients were admitted to this hospital because of cerebral vascular accidents. Table I presents

the number of patients admitted to the hospital in 1957 with the diagnosis of cerebral vascular accident. The table is arranged according to the cause of the disease and the discharge status of the patients.

Table I Patients Admitted to Hospital in 1957 with Diagnosis of Cerebral Vascular Accident

Cause of Cerebral Vascular Accident	Condition of Patient on Discharge			Total
	Improved	Not Improved	Expired	Number
Hemorrhage from undetermined cause	6	1	11	18
Hemorrhage from Hypertension	2		4	6
Hemorrhage from Arteriosclerosis	2	1	8	11
Thrombosis from Arteriosclerosis	49	1	16	66
Thrombosis from undertermined cause	12		3	15
	71	3	42	116

The writer spent approximately thirty hours reviewing the records of the seventy-four patients, who, as noted in Table I, were listed as "improved" and "not improved." Each patient's record was investigated to determine if his cerebral vascular accident had resulted in hemiplegia. It was found that twenty-nine of the seventy-four patients had resulting hemiplegias.

Each of the twenty-nine hemiplegic patients' records was then closely reviewed. The following identifying information was recorded.

1. Name
2. Address
3. Age and Sex
4. Cause of cerebral vascular accident
5. Admission date
6. Discharge date
7. Disposition of patient

If the patient had been referred to the physical medicine department, the date, kind and number of treatments and pertinent comments were recorded. The nurses' notes from each patient's record were reviewed and all notations about the patient's exercise program and affected arm were recorded. The doctor's orders and progress reports of each patient were also reviewed.

The results of the investigation showed that eleven of the twenty-nine hemiplegic patients had been referred to the physical medicine department, while eighteen had not been. One of the patients who had not been referred to the physical medicine department, however, had had a consultation with the physiatrist. A cross-check review of the physical therapy department records revealed that three of the eighteen patients had been referred to that department, although two of the three patients had had only one treatment each. The final results of the investigation showed that fourteen of the twenty-nine hemiplegic patients had been referred to the physical medicine department; fifteen had not been. Table II presents this information.

Table II Relationship of Hemiplegic Patients to Physical Therapy Department

	Referred to Physical Therapy		Not Referred to Physical Therapy	
Sex of Patient	Received Treatments	One Treatment Only	Received No Treatments	Consultation Only
Male	6	2	7	1
Female	6	0	7	0

In the writer's opinion, the validity of this study would depend a great deal on the comparison of the patients who had received the benefits of physical medicine with those who had not. Therefore, as will be recalled from Chapter I, the patients who had been referred to the physical medicine department for exercise therapy were paired according to sex and age with those who had not been referred for any of the services offered by that department. The division of the twenty-nine hemiplegic patients by sex showed the following: sixteen males, ranging from fifty-one to ninety years of age. Of the sixteen males, eight had been referred to the physical medicine department; eight had not. Of the thirteen females, six had been referred to the physical medicine department; seven had not. Figures 1 and 2 show the pairs of patients according to age and physical therapy.

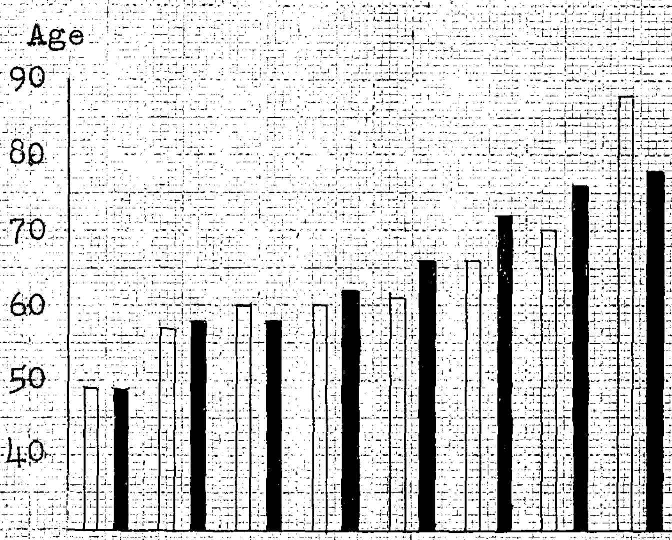

Fig. 1 Male patients paired according to age and physical therapy

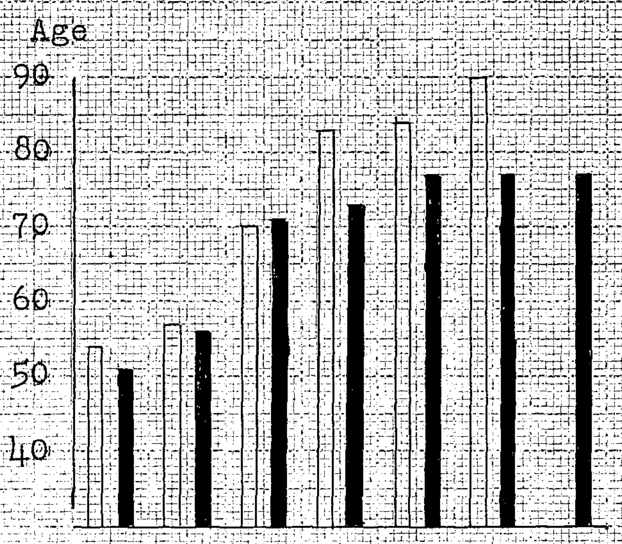

Fig. 2 Female patients paired according to age and physical therapy

Legend

Referred to P.T.

Not referred to P.T.

From this breakdown, an attempt was made to interview twenty of the twenty-nine hemiplegic patients. The sample of twenty patients consisted of six pairs of male patients and four pairs of female patients. Figures 3 and 4 show the pairs of selected patients to be interviewed according to age.

As stated previously, fourteen hemiplegic patients were interviewed for this study. The writer was unable to interview six of the sample of twenty patients. Three of these six patients had expired and one refused to be interviewed. The writer was unable to locate two of the six patients. Figures 5 and 6 show the ages of the fourteen hemiplegic patients who were interviewed for this study.

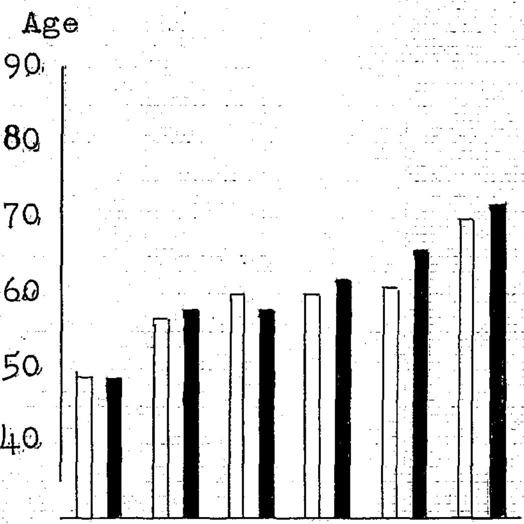

Fig. 3 Male patients selected for interview, paired according to age and physical therapy

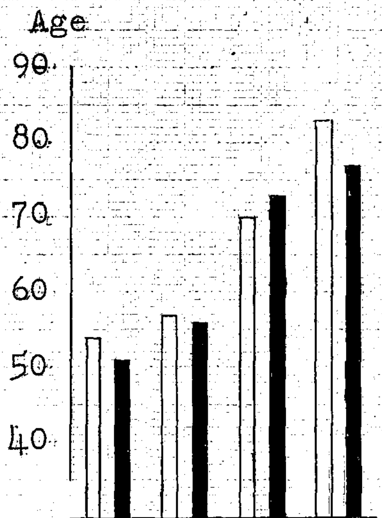

Fig. 4 Female patients selected for interview, paired according to age and physical therapy

Legend

Referred to P.T.

Not referred to P.T.

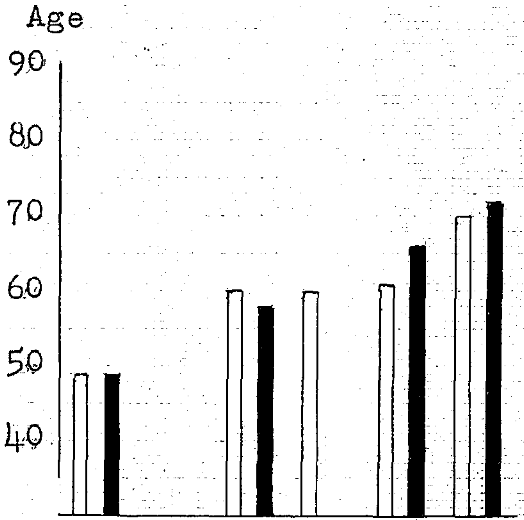

Fig. 5 Male patients interviewed for study

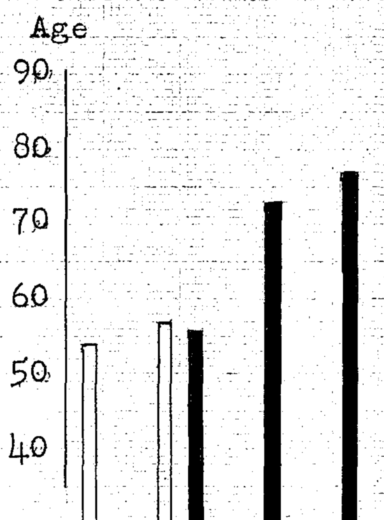

Fig. 6 Female patients interviewed for study

Legend

Referred to P.T.

Not referred to P.T.

Tool

An interview guide was used by the writer while conducting the interviews of the fourteen hemiplegic patients. This guide enabled her to obtain what she considered the necessary data for testing her hypothesis.

Development of Tool

The construction of the interview guide was governed by the aims of this study as stated in Chapters I and II. The guide was prefaced with factual information. The sex, age, and diagnosis of the patient were recorded. Because of the possibility of not being able to successfully interview a patient alone, such as in the case of a patient with aphasia or severe cerebral damage, space was allowed to record the person or persons giving the information. The "hand preferred" by the patient was recorded because this, it was felt, would have great bearing on the post-hospital condition of the patient's affected arm in relation to his performing some of the activities of daily living.

The interview guide was constructed to obtain information pertaining to each of the three aims of this study. A list of questions was compiled which in the writer's opinion would furnish the data that she wished to collect. The guide was arranged so that the interviewer could use check marks or a code system. This plan, it was felt, would be time-saving for the interviewer and would allow for a more informal atmosphere during the interview.

The guide was submitted to two members of the faculty for suggestions and revisions. The revised guide was then submitted to two physiatrists and three physical therapists. Their suggestions were taken into consideration and minor changes were made. The interview guide was then pre-tested on two graduate nurses. A copy of the interview guide may be found in the appendix.

The first section of the guide pertained to the exercise program carried out during the patient's hospitalization. As stated previously, this study was limited to the patient's affected upper extremity. The questions, therefore, referred to the patient's shoulder, elbow, wrist, and fingers. The writer felt it important to ascertain by whom any attention to the arm was given. In view of the fact that the patient's arm might have been put through its normal range of motion without his awareness, a discussion of the bath technique occurred during the interview.

Included in this section of the guide were questions regarding the use of special equipment and the encouragement given the patient to use his arm.

The second section of the interview guide pertained to the post-hospital condition of the patient's affected arm. The first question of this section was concerned with the patient's present use of his arm, and if and when any improvement had been noticed. Because of the possibility of physical therapy or exercises being initiated after the patient's discharge from the hospital, questions pertaining to these points were included.

The last question in this section related to the movement of his arm. A code number was used to compare the movement of each of his joints with any associating pain during motion.

The third section of the interview guide pertained to the condition of the patient's affected arm in relation to some of the activities of daily living. A modified "activities of daily living" list was composed, including activities of hygiene, eating, and a few miscellaneous hand activities. Space was left at the end of the interview guide for any comments the interviewer wished to record.

Procurement of Data

Before conducting the interviews with the selected sample of patients, the writer reviewed literature on the general subject of interviewing. Guided by the primary objective of an interview as stated by Merton, Fiske, and Kendall, the writer did not set up any time limitations for the actual interviews.

> "Primary objective of the focused interview is to elicit as complete as possible of what was involved in the experience of a particular situation."[1]

The interviews averaged approximately one hour in length of time, with the range being from forty-five minutes to two hours.

The interviewer used her own judgment in each situation as to the explanation for collecting the data. The explanations

1 Merton, Robert K., et al., The Focused Interview, p. 21.

varied from a simple discussion of the "follow-up" interest as a nurse to a full exposition of the study being conducted.

At the beginning of the first few interviews, the writer experienced non-verbal communication of distrust and suspicion. By coincidence only, the writer was wearing her white uniform when conducting her fourth interview. She experienced no communication of suspicion during this interview. As a result, the writer wore her uniform while conducting the remaining interviews.

According to the literature, when attempting to receive a valid response, the interviewer must lead the interviewee to discuss the subject in great detail.

> "Furthermore, when subjects are led to describe their reactions in great detail, there is less prospect that they will intentionally or unwittingly, conceal the actual character of their responses."[2]

It was the writer's experience that, except for one interview, the patients did not need to be encouraged to discuss the situations in detail. They were willing and most happy to elaborate on all aspects of their general conditions.

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[2] Ibid. p. 4.

CHAPTER IV

PRESENTATION OF DATA

The data collected for this study are presented in the following manner: first, the analysis of the findings from the records of the twenty-nine hemiplegic patients; second, the analysis of the findings of the fourteen hemiplegic patients who were interviewed.

FINDINGS OF TWENTY-NINE HEMIPLEGIC PATIENTS

Table III presents the data collected from the hospital records of the twenty-nine hemiplegic patients admitted to the hospital concerned in this study.

Table III Composite Picture of Twenty-nine Hemiplegic Patients

Patients	Sex	Age	Diagnosis *	Number of Days in Hospital	P.T. **	Number of P.T. Treatments	Hospital Day P.T. Started	Notations on Nurses' Notes **	Interviewed for Study **	Disposition ***
1	M	88	T	8	Y	1	3	N	N	NH
2	F	77	T	15	N			N	Y	H
3	F	90	T	13	Y	3	1	N	N	NH
4	F	77	T	11	N			N	N	NH
5	F	71	T	8	N			N	N	NH
6	F	54	T	19	Y	12	2	Y	Y	H
7	M	49	T	16	N			N	Y	H
8	F	73	T	22	N			N	Y	H
9	F	70	T	17	Y	6	3	Y	N	H
10	M	58	T	21	N			N	N	NH
11	M	70	T	40	Y	18	6	Y	Y	H
12	M	72	T	25	N			N	Y	H
13	M	66	H	30	Y	15	1	Y	N	H
14	M	60	T	48	Y	12	32	Y	Y	H
15	M	76	T	10	N			N	N	NH
16	M	66	T	26	N			N	Y	O
17	M	61	H	38	Y	16	3	Y	Y	H
18	F	84	H	19	Y	4	6	N	N	O
19	F	51	T	15	N			N	N	H
20	F	56	H	13	N			N	Y	NH
21	M	60	T	18	Y	1	13	N	Y	H
22	F	57	H	24	Y	10	12	N	Y	O
23	F	83	T	49	Y	22	13	Y	N	H
24	M	58	T	34	N			N	Y	H
25	M	49	T	26	Y	16	4	Y	Y	H
26	M	57	T	7	Y	3	4	N	N	NH
27	M	78	T	9	N			N	N	H
28	M	62	T	12	N			N	N	H
29	F	77	T	8	N			N	N	H

Legend *T--Thrombosis
H--Hemorrhage

**Y--Yes
N--No

***H--Home
NH--Nursing Home
O--Other (Governmental Hospital)

The ages of the twenty-nine patients ranged from forty-nine years to ninety years. The average age of the twenty-nine hemiplegic patients was 67.24 years. The sixteen male patients ranged in age from forty-nine to seventy-eight years; the average being 68.66 years. The thirteen female patients ranged in age from fifty-one to ninety years, the average being 70.76 years. Nine of the twenty-nine patients or 31.0 per cent, however, were below the age of sixty years, while thirteen or 44.8 per cent were below the age of sixty-five years. According to today's average life-expectancy, these figures would seem to indicate that many of these patients may still look forward with hope to a few years of useful living. Table IV presents the age range of the twenty-nine hemiplegic patients with a line of division at the sixty-five-year range.

Table IV Distribution of Twenty-nine Patients by Age and Sex

Age Range	Number Males	Number Females	Total	
45 - 49	2	0	2	
50 - 54	0	2	2	
55 - 59	3	2	5	
60 - 64	4	0	4	13
65 - 69	2	0	2	
70 - 74	2	3	5	
75 - 79	2	3	5	
80 - 84	0	2	2	
85 - 89	1	0	1	
90 - 94	0	1	1	16

Fourteen or 48.3 percent of the hemiplegic patients were referred to the physical medicine department for therapy.

Fifteen or 51.7 per cent of the patients did not receive any physical therapy.

Twenty-four or 82.8 per cent of the hemiplegias resulted from cerebral thromboses, while five, or 17.2 per cent of the hemiplegias resulted from cerebral hemorrhages. The writer had expected the greater percentage of physical therapy referrals to be found among the patients who had hemiplegias resulting from cerebral thromboses. This study showed that of the patients whose hemiplegias resulted from cerebral thromboses, 41.7 per cent received physical therapy, while 58.3 per cent did not. Of the patients whose hemiplegias resulted from cerebral hemorrhages, 80.0 per cent received physical therapy; 20.0 per cent did not. Table V presents the relationship of diagnosis to referrals for physical therapy. Table V indicates that the diagnosis of the patient had much less significance in his being referred to the physical therapy department than the writer had anticipated.

Table V Diagnoses of Patients and Physical Therapy Referrals.

	Cerebral Hemorrhage		Cerebral Thrombosis	
	Number	Per Cent	Number	Per Cent
Referred to P.T.	4	80	10	41.7
Not Referred to P.T.	1	20	14	58.3

For the fourteen patients who were referred to the physical medicine department, the day that physical therapy was begun varied greatly. Two of the patients began their treatments on their first hospital day, while one patient, coded as 14 in Table III, began his treatments on his thirty-second hospital day. Patient coded as 24 had a consultation with the physiatrist on his twenty-fifth hospital day. However, although the range of the days that the treatments were begun is great, ten or 71.4 per cent of the patients who were referred for physical therapy had their treatments begun during their first week of hospitalization.

The number of treatments received by the patients also varied greatly. Patients coded as 1 and 21 in Table III received one treatment each, while patient coded as 23 received twenty-two treatments. Seven of the fourteen patients received ten or less treatments; seven received more than ten treatments. It might be interesting to note that nowhere in her readings did the writer find any estimated figures as to the recommended number of physical therapy treatments suggested for a hemiplegic patient.

The total length of hospitalization of the twenty-nine hemiplegic patients was 601 days. The range of hospital days of the twenty-nine patients was from seven to forty-nine days. The average stay in the hospital was 20.72 days. Of the 601 hospital days, 356 were used by the fourteen patients who had been referred to the physical therapy department, while the other fifteen patients used the remaining days.

These findings indicate that the patients who received physical therapy remained in the hospital 18.4 per cent longer than those patients who did not receive any therapy. From the data collected for this study, the writer was unable to determine if it was the therapy alone that accounted for the longer hospitalization of the patients who received physical therapy.

December was the only month of the year that no hemiplegic patient was admitted to the hospital. Table VI shows the monthly admissions of the hemiplegic patients to the hospital and the total number of hospital days.

Table VI Monthly Admissions and Length of Hospitalization

	Male Admissions	Hospital Days	Female Admissions	Hospital Days	Total Monthly Admissions
January	3	78	1	19	4
February			2	23	2
March	1	9	1	15	2
April	1	40	3	54	4
May	1	16	1	17	2
June	1	48			1
July	2	39	3	70	5
August	1	12	1	24	2
September	1	26			1
October	3	67	1	11	4
November	2	33			2
December					

Eight or 27.5 per cent of the records of the twenty-nine hemiplegic patients showed notations in the nurses' notes in reference to movement and exercise of the affected arm. No notations of exercise therapy or movement of the affected arms were found in the nurses' notes of the fifteen patients who had not received physical therapy. Table VII presents whether or not notations appeared in the nurses' notes in relation to whether or not the patients received physical therapy.

Table VII Relationship of Notations in Nurses' Notes and Physical Therapy

	Notations	No Notations
Patients who received P.T.	8	6
Patients who did not receive P.T.	0	15

It would appear that the nursing personnel is more aware of the affected arm or at least feels it necessary to record the progress of the affected arm of a hemiplegic patient when he is receiving physical therapy than when he is not. The writer is aware, however, that the information shown in Table VII does not indicate whether or not the members of the nursing staff put the affected arm through its normal range of motion when caring for the patient. The table only indicates that such information was not recorded.

The writer was unable to evaluate the notations in reference

to exercises and movement of the affected arms made in the nurses' notes so as to present in categories; therefore, the exact notations are presented for each patient. The code number for each patient is the same as was used in Table III.

Patient 6 "Sat in chair a while before having P.T. exercises"

Patient 9 "Exercising Rt. arm and leg
Rt. arm and leg exercises done
Exercising Rt. arm and leg with P.T."

Patient 11 "Moves arm and leg well"

Patient 13 "Moves arm and leg well"

Patient 14 "Moves arm and leg by self
Exercises to arm
Doing very well with exercises
Taken to P.T. for Electrical Tests by Dr.____"

Patient 17 "Moves Lt. arm with encouragement
Does arm and leg exercises by self"

Patient 23 "P.T.
P.T. to arm and leg
Exercises to arm and leg
P.T."

Patient 25 "P.T. done
P.T. done

The disposition through discharge of the twenty-nine hemiplegic patients is presented in Table VIII.

Table VIII Disposition of Twenty-nine Hemiplegic Patients

	Males	Females	Total	Per Cent
Home	11	7	18	62.1
Nursing Home	4	4	8	27.6
Other	1	2	3	10.3

Legend--Other--Governmental type hospital

The writer was particularly interested in a comparison of the disposition through discharges of the hemiplegic patients in relation to whether or not they had had physical therapy. It was felt that physical therapy would have great bearing on the patient's gaining sufficient independence to return to his own home. Table IX presents the disposition through discharge of the twenty-nine hemiplegic patients in relation to physical therapy.

Table IX Disposition of Hemiplegic Patients in Relation to Physical Therapy

	Home	Nursing Home	Other	Total
Patients who received PT	9	3	2	14
Patients who did not receive PT	9	5	1	15

As evidenced by Table IX , the writer's belief that physical therapy would affect the disposition of hemiplegic patients was not substantiated. Since, however, the variabilities of other problems associated with hemiplegia and the variabilities of home situations were not considered in this study, the writer does not feel that the evidence in this study is sufficient to conclude that physical therapy has no effect on the disposition through discharge of hemiplegic patients.

FINDINGS OF PATIENTS INTERVIEWED FOR STUDY

To facilitate the interpretation of the data presented in this section, the writer has retained the same code number for each of the fourteen patients that was initially used in Table III

The data is presented through subheadings according to the general groupings of the interview guide; factual information, exercise programs, post-hospital condition of affected arm and modified activities of daily living as explained in Chapter III.

Factual Information

Of the fourteen patients interviewed, six patients had left hemiplegias; eight had right hemiplegias. All patients were right handed except patient 25. However, patient 25 was among those that had left hemiplegias.

Six or 42.8 per cent of the patients supplied all the information themselves. These patients were 6, 11, 12, 14, 17, and 22. Four or 28.6 per cent of the patients answered the interviewer's questions with the assistance of a member of the family. These patients were 2, 7, 16, and 25. Four or 28.6 per cent of the patients were aphasic. Patients 8, 21, and 24 had a member of the family present to assist in answering the questions. The data for patient 20 were interpreted by a member of the staff of the Nursing Home where she was staying. Although aphasic, patient 20 understood the questions and the writer felt that the interview was satisfactory.

In the interviews where the patients were unable to answer the questions themselves, the validity of the responses

might be questioned, since the families of patients are not present at all times during the patients' hospitalizations. During the interviews in which the family was involved, it was the writer's experience that the family, in many ways, assisted the patient to recall the care and treatments that he had received while hospitalized.

A summary of the factual information on the fourteen patients is presented in Table X.

Table X Factual Information of Patients Interviewed

Patient	Sex	Age	Hemiplegia		Hand Preferred		Responses given by		
			Left	Right	Left	Right	Self	Self and Family	Other Person
2	F	77	x			x		x	
6	F	54		x		x	x		
7	M	49		x		x		x	
8	F	73		x		x			x
11	M	70	x			x	x		
12	M	72		x		x	x		
14	M	60	x			x	x		
16	M	66	x			x		x	
17	M	61	x			x	x		
20	F	56		x		x			x
21	M	60		x		x			x
22	F	57		x		x	x		
24	M	58		x		x			x
25	M	49	x		x			x	

The data for the remainder of this study are presented according to the three sections of the interview guide as explained in Chapter III. The findings of the first two sections are presented by stating the questions and evaluating the responses. In accord with the rest of this chapter, the

patients retain the same code number as used in Table III.

Exercise Program

Question 1. While you were in the hospital, was your arm exercised?

Seven or 50.0 per cent responded "yes," seven or 50.0 per cent responded "no." It is interesting to note that the seven patients who responded in the affirmative had been referred to physical therapy and the negative responses were from the patients who did not receive any physical therapy. Again, aware of the possibility of the nursing staff's having put the patient's arm through its normal range of motion without his awareness, the interviewer, when she received a negative response, discussed with the patient the various positions in which his affected arm may have been placed and the general bathing techniques used. Such responses as the following were received:

"I didn't notice if they put my arm above my head."

"If they did, I wouldn't call that exercising my arm."

"I don't remember my arm being in any other position. It was always by my side."

"Sure, when I had a bath my arm was moved."

Each of the seven patients that answered the question in the affirmative specified the physical therapist as the member of the hospital staff who administered the exercises to his affected arm. However, patient 17 stated that a graduate nurse had exercised his arm once. All seven patients stated that the exercises were done only once a day. None of the patients

could specify the exact length of time involved in the exercise therapy; but all stated approximately five to ten minutes or ten to fifteen minutes.

It would appear that only the patients who had received physical therapy recalled any exercise program being carried out on their affected arms. If members of the nursing staff were involved with an exercise program of the patients' affected extremities, the patients, in general, were not aware of it.

Question 2. Was any special equipment used for these exercises?

Although this question would apply normally only to the patients who had answered question 1 affirmatively, during the interview, the question was rephrased for those patients who had answered the first question in the negative. Eleven patients responded "no," three patients, 14, 22, and 25, answered "yes." These three patients had used a rubber ball in order to exercise their hands and fingers, and were also among the seven patients who received physical therapy. Patient 14 had been brought the ball by his wife, however, he stated that a nurse's aide had encouraged him to use it in order to exercise his hand. A daughter of patient 22 had encouraged her to use the rubber ball, and a physical therapist had instructed patient 25 to use a ball. During the interview with patient 16, he inquired as to the possibility of a pulley being set up in his home in order to exercise his arm and give his shoulder greater range of motion. It is interesting to note that this patient had not

received any physical therapy.

Question 3. Were you instructed to do exercises by yourself?

Seven or 50.0 per cent responded "yes" and seven or 50.0 per cent responded "no." Patient 21 was among those who responded negatively, although he had been referred to physical therapy. He had, however, received only one treatment of exercise therapy so that the writer feels this was a valid response. It is the writer's opinion that one treatment by the physical therapist or one visit to the physical therapy department is neither sufficient for stressing the importance of exercise therapy nor sufficient for patient teaching.

Patient 2 responded affirmatively to question 3 after having responded negatively to the question of her arm having been exercised. On requestioning, the patient insisted that her arm had not been exercised, but that her private duty nurse had instructed her to do exercises. Since the patient stated that she had been instructed to do exercises, and yet insisted that her arm was not exercised, the writer feels that the private duty nurse may have exercised the patient's arm without her being aware of it.

Four patients, 6, 11, 14, and 17, stated that the physical therapist had instructed them to do the exercises. Patient 14 and patient 17 stated that graduate nurses had also instructed them to do exercises. Patient 11 stated that his doctor likewise had instructed him to do the exercises. Patients 22 and 25 stated that only their doctors had instructed them to

exercise their affected arms themselves.

Question 4. Were you encouraged to use your affected arm?

Eight patients responded negatively to this question. As in question 3, patient 21's response was negative. Patient 25 responded negatively to this question even though his responses for the three previous questions were in the affirmative. However, he definitely felt he was not encouraged to use his affected arm.

Patient 2 again responded affirmatively, stating her private duty nurse had encouraged her to use her affected arm. The writer feels this further supports the possibility that the private duty nurse exercised the patient's arm without her awareness.

Of the six affirmative responses, the hospital staff members were named as follows: three patients named the physical therapist, all six patients named the graduate nurses, one patient named the doctor, one patient named the nurses' aide, and two patients named the student nurses. It is interesting to note that this question was the only one that received a response indicating any participation in the exercise program by student nurses.

Table XI presents a graphic summary of the patients' positive responses to the four questions pertaining to the exercise program of the hemiplegic patients who were interviewed.

Table XI Positive Responses to Questions Concerning the Exercise Programs

Patient	Question 1	Question 2	Question 3	Question 4
2			C	C
6	A		A	A, B, C, D
7				C
8				
11	A		A, B	A, C
12				
14	A	x	A, C	C, D, E
16				
17	A, C		A, C	A, C
20				
21	A			
22	A	x	A, B	
24				
25	A	x	A, B	

Legend
A...Physical Therapist
B...Doctor
C...Graduate Nurse
D...Student Nurse
E...Nurse-aide
x...Rubber Ball

Post-Hospital Condition of the Patient's Affected Arm

Data for this section are presented in the same manner as in the previous section.

Question 5. Can you do more with your arm than you could when you were first ill?

Twelve or 85.7 per cent of the patients responded affirmatively to this question. Two patients, 16 and 21, responded negatively. Five patients stated that the improvement of their affected arms was noticed during their hospitalization, seven

patients stated the improvement was noticed after their discharges from the hospital.

Table XII. Responses Concerning Improvement of Affected Arm

	Number of Patients who Noticed Improvement while in Hospital	Number of Patients who Noticed Improvement after Discharge from Hospital	Number of Patients who Noticed No Improvement
Patients who Received P.T.	4	2	1
Patients who Did not Receive P.T.	1	5	1

As evidenced by Table XII, improvement of the affected arm was noticed sooner by the patients who received exercise therapy than by the patients who did not receive any exercise therapy. The writer believes that the information presented in Table XII helps to support the major premise of the hypothesis, that the exercise program for a hemiplegic patient has a direct effect on the post-hospital condition of his affected shoulder, arm, and hand.

<u>Question 6</u>. Are you having physical therapy now?

All fourteen patients responded negatively to this question. However, after discharge from the hospital, patient 24 had a physical therapist come to his home to give exercise therapy. Arrangements for this were made on a private basis, and no

referral had been made through the physician or the hospital staff. This is the patient who had had a consultation with the physiatrist, but no physical therapy was ordered. A short leg brace was recommended for the affected leg, but there was no "follow-through" of this recommendation made.

Question 7. Are you still doing exercises by yourself?

Nine patients responded "yes," five patients responded "no." Of the negative responses, three patients had no exercise therapy while hospitalized. Patient 6 felt that exercises were no longer needed because of good functional return of her affected arm. Patient 21, who also responded negatively to this question, consistently gave negative responses.

Of the nine patients who responded positively, seven stated they did exercises when they happened to think of them; therefore, they were recorded as "irregular." Patient 24 stated he exercised regularly--four times each day.

Patient 20 also exercised regularly--six times each day. This patient was discharged from the hospital to a nursing home where she stayed for a brief time. After her discharge from the nursing home, she remained in her own home until the death of her father necessitated her return to the nursing home.

During the patient's stay at home, a local visiting nurse gave daily care, taught the patient exercises and stressed the importance of exercise therapy.

Question 8. How well can you move your arm now? (Interviewer's observation)

In order to obtain responses to this question, each

patient was asked to put the joints of both arms through a range of motion as demonstrated by the interviewer. The range of joint motion and associated pain, if any, of the affected arm was compared with that of the unaffected arm. The code system used by the interviewer is explained in the interview guide.

The writer was unable to separate the degree of movement and pain according to the code of the interview guide. Where movement was not limited, there was no pain. As the limitation of movement increased, so did the pain. In presenting the responses to this question, the writer has used only one code to represent the association of limitation of movement and pain.

Table XIII Responses Concerning Movement and Pain of Joints

Patient	Shoulder				Elbow				Wrist				Fingers			
	grade				grade				grade				grade			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
2		x			x					x				x		
6	x				x				x				x			
7	x				x				x				x			
8			x			x				x					x	
11	x				x				x				x			
12		x			x				x				x			
14	x				x				x				x			
16				x		x			x					x		
17	x				x				x				x			
20				x		x					x			x		
21			x		x				x					x		
22		x			x				x				x			
24			x		x				x					x		
25		x			x				x					x		

Legend

Movement
1. As well as other arm
2. Almost as well as other arm
3. Moderate Movement
4. Slight Movement

Pain
1. No Pain
2. Slight Pain
3. Moderate Pain
4. Severe Pain

The following is a summarization of Table XIII:

Five patients, 6, 7, 11, 14, and 17, were graded as 1 in all the joints of their affected arms. Four of these patients had received the benefits of physical therapy. Patient 7, who did not receive physical therapy, was among the patients who had noticed improvement in his affected arm while he was hospitalized, which perhaps would indicate a spontaneous recovery.

Three patients, 12, 22, and 25, received grade 1 in all the joints of their affected arms except their affected shoulders, in which each was graded as 2. Two of these patients had received the benefits of physical therapy.

Patient 2 received a grade of 1 or 2 in all four joints of her affected arm. It will be recalled that this patient had stated she did not receive any exercise therapy, but this further supports the writer's opinion that the private duty nurse had exercised the patient's arm without her awareness.

Three patients received a grade 3 in their affected shoulder joints with better grades in the other joints of their arms. Patients 8 and 24 had not received any physical therapy. Patient 21 had received one treatment only, further supporting the writer's belief that one treatment of exercise therapy is not adequate.

Patients 16 and 20 received a grade of 4 in their affected shoulders. These two patients had only slight movement and severe pain in their shoulder joints. Neither of these patients had received any exercise therapy while hospitalized.

Since a "frozen shoulder" is one of the principal deformities to which a hemiplegic patient is predisposed and which might be prevented by exercise therapy, Table XIV is presented to indicate the relationship of physical therapy to pain and limitation of movement only in the affected shoulders of the fourteen hemiplegic patients interviewed for this study. The code system used in Table XIV is the same as explained in Question 8 of the Interview Guide.

Table XIV Relationship of Physical Therapy to Pain and Limitation of Movement In Affected Shoulders of Hemiplegic Patients.

	Number of Patients in Grade 1	Number of Patients in Grade 2	Number of Patients in Grade 3	Number of Patients in Grade 4
Patients who received P.T.	4	2	1*	0
Patients who did not receive P.T.	1	2	2	2

*Patient who had one treatment only

Table XIV seems to indicate that physical therapy plays an important role in preventing the deformity, "frozen shoulder." The writer believes that Table XIV also supports the major premise of the hypothesis--the exercise program for a hemiplegic patient has a direct effect on the post-hospital condition of

his affected shoulder, arm, and hand.

Modified A. D. L.

To facilitate the interpretation of the data obtained from this section of the interview guide, the writer has divided the results into three categories: category 1, patients who were able to carry on all the activities of daily living without difficulty; category 2, patients who needed help in some of the areas; category 3, patients who required assistance in practically all of the activities of daily living.

When setting up the modified activities of daily living list, the writer believed, as previously stated, that the ability of the patient to carry out the activities without assistance would depend upon whether the preferred hand was on the same side as the hemiplegia. This factor did not prove to be so important as the author had anticipated.

Category 1

Six patients, 6, 7, 11, 12, 14, 17, were able to carry out all the activities on the list without difficulty. Three of these patients had left hemiplegias, and three had right hemiplegias. All six patients were right handed. It should be noted that five of these patients were graded as 1 in all joints of their affected arms. Patient 12 was graded 2 in his shoulder joint and 1 in the remaining joints of his affected arm. Patients 6 and 12, however, stated they wished that they had more "strength" in their affected hands.

Category 2

The evaluation of four patients, 2, 20, 22, and 25, placed them in this category, category 2.

Patient 2 required assistance in dressing activities only. She was able to carry on the hand and eating activities without aid. She stated she had "pain" in her affected arm.

Patient 20 required assistance in managing toilet needs and in eating activities. This woman had taught herself the other activities of daily living which she was able to manage by herself. She also had taught herself to write with her left hand.

Patient 22, who had been graded 2 in her shoulder joint, had difficulty combing her hair. She also required assistance with most eating activities and was unable to write.

Patient 25 required some aid in the dressing and eating activities; and like the previous patient, he was unable to write. This 49-year-old patient had a left hemiplegia, and he preferred his left hand. He had been self-employed in a radio repair business to which he was unable to return at the time of the interview.

Category 3

Four patients, 8, 16, 21, and 24, were classified in category 3 which indicates that assistance was required in the majority of activities of daily living.

Patient 8, age 73, required considerable assistance in all activities. Her age and condition, the interviewer believed, contributed to her inability to perform many of the activities

independently. She was able, however, to manage with minimal assistance her toilet needs and eating activities.

Patient 16 required assistance in all the hygiene activities except for brushing his teeth and combing his hair. This patient had developed a "pressure area" on the heel of his affected leg which was not healed at the time of the interview. Although this study is not concerned with assessment of lower extremities, the writer has included this information because it is believed that the pressure area contributed to a delay in his ability to perform the activities of daily living. Since the patient had a left hemiplegia and was right handed, he had no difficulty with writing activities.

Patient 21 required assistance in all the areas of the activities list. During the interview, however, all members of the f amily participated emotionally and demonstrated excessive solicitous behavior. The situation in this family, it was believed, was a deterrent force for motivation of self-independence

Patient 24 required assistance in all the activities on the list except eating and drinking activities. At the time of the interview, this patient had a private duty nurse because his wife, who had previously cared for him, was disabled, due to a fractured hip.

Patients who were in category 3 showed not only a low degree of independence but also a great need of assistance from others.

The writer's belief that the patient's ability to carry on the activities of daily living would be greatly affected if the side involved were the same as the preferred hand was not substantiated by the data as illustrated in Table XV.

Table XV Relationship of Category of Patient to His Hemiplegia and Hand Preferred

	Number of Patients in Category 1	Number of Patients in Category 2	Number of Patients in Category 3
Patients whose Hemiplegia and Hand Preferred were on Same Side	3	3	3
Patient whose Hemiplegia and Hand Preferred were on Different Sides	3	1	1

The writer's minor premise of the hypothesis was that the post-hospital condition of the hemiplegic's shoulder, arm, and hand affects his post-hospital rehabilitation status in reference to his performing selected activities of daily living. Table XVI which presents the relationship of the grade each patient received for the post-hospital condition of his affected shoulder to the category in which he was placed for his ability to perform the selected activities of daily living supports the minor premise.

Table XVI Relationship of Post-Hospital Condition of Affected Shoulder to Activities of Daily Living

Patient	Condition of Shoulder Grade	Activities of Daily Living Category
2	2	2
6	1	1
7	1	1
8	3	3
11	1	1
12	2	1
14	1	1
16	4	3
17	1	1
20	4	2
21	3	3
22	2	2
24	3	3
25	2	2

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

<u>Summary</u>---This study is a survey of the condition of the affected upper extremities of hemiplegic patients admitted to one hospital during the year 1957. No attempt was made, in the study, to evaluate the patients in relation to the many other problems associated with hemiplegia.

The aims of the study were to determine:

1. The exercise program, if any, that had been carried out for the affected arm of each patient while he had been hospitalized,

2. The post-hospital condition of the patient's affected arm in relation to joint movement and pain,

3. The post hospital condition of the patient's affected arm in relation to his performing selected activities of daily living.

Through a review of the hospital records, the writer found that 116 patients had been admitted with the diagnoses of cerebral vascular accidents. Forty-two of these patients had expired and seventy-four had been discharged from the hospital as "improved" and "not improved." A close review of the patients' hospital records revealed that twenty-nine of the seventy-four patients had hemiplegias resulting from their cerebral vascular accidents. Each of the twenty-nine hemiplegic

patients' hospital records, including the nurses' notes and progress reports was studied. Sufficient data were collected to give a composite picture of the twenty-nine patients and to test the hypothesis--the hemiplegic patient's rehabilitation level, in reference to his performing selected activities of daily living, is dependent upon the exercise program carried out on his affected shoulder, arm and hand during his hospitalization. An analysis and interpretation of the data collected from the records of the twenty-nine hemiplegic patients were presented in the study in Chapter IV.

It was believed that the factor which would have the most influence on the results of the study was whether or not the patient had been referred for the services of the physical medicine department. Throughout the study, therefore, patients who had received physical therapy were compared with patients who had not received physical therapy.

Patients who received physical therapy were paired according to sex and age with those who had not received any therapy. The six youngest pairs of male patients and the four youngest pairs of female patients were selected to be interviewed for the study. The writer was successful in interviewing fourteen of the twenty selected patients.

An interview guide was developed and used during the interviews with fourteen of the twenty-nine hemiplegic patients. The guide consisted of questions pertaining to each of the three aims of the study. The results of the responses obtained during the interviews were discussed in detail in Chapter IV.

Conclusions---The following conclusions were drawn from the analysis of the data:

1. Less than one-half of the hemiplegic patients were referred to the physical therapy department.
2. Patients who were not referred to physical therapy did not receive exercise therapy by the nursing personnel.
3. The nursing personnel were not actively involved in the exercise programs of the hemiplegic patients who did receive physical therapy.
4. Improvement of the affected arms was noticed sooner by the patients who received physical therapy than by the patients who received no exercise therapy.
5. The use of equipment to aid in the exercise programs was minimal.
6. One treatment of exercise therapy is not sufficient for stressing the importance of exercise therapy nor sufficient for patient teaching.
7. The needs of some of the hemiplegic patients in regard to exercise therapy were met by individuals outside of the hospital staff.
8. Patients who were taught the importance of exercise therapy continued their exercises after they were discharged from the hospital.
9. Student nurses participated little in teaching and exercise programs of the hemiplegic patients.

10. Progress of the affected arms was recorded in the nurses' notes only for patients who received physical therapy.
11. The study showed no evidence of a program of vocational rehabilitation being utilized.
12. The education of the patient and his family in regard to performing selected activities of daily living was minimal for those who received physical therapy and almost lacking for those who did not receive physical therapy.
13. The relationship of the side of hemiplegia to the preferred hand did not have so great an effect on his ability to perform selected activities of daily living as was anticipated.
14. Physical therapy did not have so great an effect on the disposition through discharge of the patients as was anticipated.
15. The exercise program that a hemiplegic patient receives while hospitalized has a direct effect on the post-hospital condition of his affected arm.
16. The post-hospital condition of a hemiplegic's affected arm influences his ability to perform some of the selected activities of daily living.

Recommendations---From an analysis of the findings of this study, the following recommendations are made:

1. That an investigation be made as to why so many hemiplegic patients are not afforded the benefits of the available services of the physical medicine department.
2. That further studies be made as to the possibility of more "out-patient" use of the physical medicine department by hemiplegic patients.
3. That a study be made to determine what pertinent information about the progress of hemiplegic patients should be noted by nurses on the patients' hospital records.
4. That an investigation be made of the feasibility of equipment being used on the hospital wards for the hemiplegic patient's rehabilitation program--such as a "pulley" that would allow the patient to put his affected shoulder through its normal range of motion.
5. That an investigation be made as to the possibility of more utilization of available community resources such as Vocational Rehabilitation.
6. That an educational program, for the nursing personnel, in the Principles of Rehabilitation Nursing be instituted which would include the importance of an exercise program, the encouragement of the patient's performing activities of daily living, and the importance of patient and family teaching.

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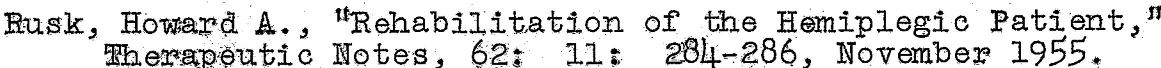

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3. Were you instructed to do exercises by yourself?

Yes__________ No__________

<u>What and By Whom?</u>

	PT	GN	SN	Other	Self
Yes No Uncertain					

4. Were you encouraged to use your affected arm?

Yes__________ No__________

<u>How and By Whom?</u>

	PT	GN	SN	Other	Self
Yes No Uncertain					

5. Can you do more with your arm than you could when you were first ill?

Yes__________ No__________

<u>When Improvement Noticed?</u>

	Before Leaving Hosp.	Since Disch. from Hosp.
Yes No Uncertain		

6. Are you having Physical Therapy now?

Yes__________ No__________

	Home	Clinic	Doctor's Office
Yes No			

7. Are you still doing exercises by yourself?

Yes__________ No__________

	Daily	Weekly	Irregular
Yes No			

8. How well can you move your arm now? (Interviewer's Observation)

	Shoulder	Elbow	Wrist	Fingers
Movement Pain				

Legend

Movement	Pain
1. As well as other arm	1. No Pain
2. Almost as well as other arm	2. Slight Pain
3. Moderate Movement	3. Moderate Pain
4. Slight Movement	4. Severe Pain

Modified A. D. L.	Code	Improvement Yes	Improvement No
Hygiene			
1. Brush teeth			
2. Comb hair			
3. Tub bath			
4. Shower			
5. Wash at sink			
6. Shave - Cosmetics			
7. Dress			
Put on underwear			
Put on outer clothing			
Button clothes			
Tie shoes			
8. Manage toilet needs			
Eating			
1. With fork			
2. With spoon			
3. Cut meat			
4. Butter bread			
5. Drink from cup			
6. Drink from glass			
Hand Activities			
1. Write name			
2. Write letters			
3. Dial telephone			
4. Turn pages of book			
5. Handle money			

What activities would you like to be able to do that you can't because of your arm?

COMMENTS: