

A STUDY OF VOCATIONAL STATUS OF THREE HUNDRED
TWENTY-NINE PATIENTS BEFORE AND AFTER HEART SURGERY

by

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A THESIS

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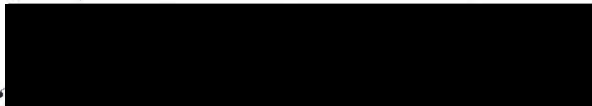
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CHAPTER I

Introduction to the Problem

As a part of its growing social consciousness, modern medicine is paying greater attention to disability resulting from chronic disease. This attitude, together with increased effectiveness of medical techniques stemming from systematic research, has contributed to the growth of rehabilitation programs throughout the United States. Since the aim of modern medicine is to restore the disabled individual to his fullest capacity, not only physically but vocationally, mentally, and socially, it is appropriate that the nursing profession should participate in the achievement of this goal.^{25,29}

It is surprising that, in view of the great advances that have been made in cardiac surgery during the past few years, little attention has been paid to the subsequent integration of the surgically restored cardiac patient into a productive vocational role.^{13,24}

This study is primarily concerned with the vocational adjustments of patients with surgically correctable cardiac disease before and particularly after heart surgery. These patients, as the study will attempt to demonstrate, make up a significant segment of our growing population. Such surgical patients must strive for independence and a plan carefully outlined for self-help is indicated.

According to Terry, chronic disease, including cardiovascular problems, comprises over 80% of all disabling conditions.²⁹ Chronic disease is sometimes related to economic status and may develop more frequently in families of the middle and lower income brackets. It is

the members of these families who definitely need to return to the labor force.^{4,24,29}

Since nursing care implies "total patient care," helping the surgical patient to help himself to his fullest potentiality by increasing his independence through return to work should not be excluded.^{1,21}

In nursing literature there are many terms to describe the variety of nursing care that is needed. Such terms include "comprehensive nursing," "establishment of a therapeutic nurse-patient relationship," "understanding the patient's emotional needs," and "tender, loving care." These terms all express what is needed, but the problem of how the empathetic and astute nurse can give this kind of care and still remain a coordinator between the patient, the physician, and the community must yet be resolved.

Although other disciplines may be employed such as occupational therapy, physical therapy, psychiatry, and social service, the nurse, as suggested by Knocke, must often act as a coordinator. To be sure, the physician is the guiding force, but it is the nurse who has the responsibility to see that the patient applies to his daily pattern of living the principles of treatment as prescribed for him.^{18,19} Since nursing educators teach that rehabilitation starts at the time the patient is admitted to the hospital, it is important that nurses pay attention to factors in the patient's condition that will facilitate his return to gainful employment.

Statement of the Problem

The purpose of this study was to obtain information from heart surgical patients in a selected hospital to answer the following questions:

1. At what time prior to surgery does the patient quit work?
2. At what time after surgery does the patient return to work?
3. What is the relationship between return to work and age, sex, type of surgical procedure and vocation?
4. What factors influence the patient's return to work after heart surgery?
5. If the patients are not regularly employed, what do they do?

Importance of the Problem

During the past few years there has been an increased recognition of programs for medical rehabilitation. The need for the extension of such facilities by the American Heart Association is evident in the growing establishment of Work Evaluation Units across the United States.^{14,33}

Attention to rehabilitation was focused on the veteran through the work of Rusk, but relatively little effort has been made to establish programs for civilians.²⁵ Rehabilitation efforts are increasing in mental and tuberculosis hospitals, but insufficient attention has been paid to patients who have a chronic illness such as heart disease.

The role of the nurse in a comprehensive rehabilitation program, which includes vocational guidance with testing for various types of work performance, has many interesting facets. She must be prepared to motivate, give understanding, and know something about the technics of selective planning. Perhaps the most crucial position may be that of the Public Health Nurse for she is in a unique position to evaluate how much or how little the surgical heart patient is debilitated when he returns home. Since "rehabilitation begins the moment the patient enters the hospital" or "before a patient's admission" as advocated by Rusk and Terry,^{25,29} the hospital nurse will likewise be able to make useful

observations regarding rehabilitation. But is this really considered a part of the nursing care plan for patients? As the findings of this study may prove, the strategic position may be that of the nurse on the surgical heart team.

Perhaps there is some psychological barrier to the patient's returning to his former employment to which the nurse can find a solution. The patient's capacity to adjust or the family's attitude toward retraining may also present barriers.^{5,8,10}

The findings of this study may be of value to personnel of the surgical heart team in improving the rate of return to work of heart surgery patients. Perhaps the study will form the basis for a more comprehensive rehabilitation program which includes vocational guidance with testing for various types of work performance.

Definition of Terms

For the purpose of clarification the following definitions will be used throughout the study:

1. Rehabilitation means "the restoration of the individual to the fullest physical, mental, social, vocational and economic usefulness of which he is capable."²⁹
2. The Surgical Team includes the group of persons who contribute in some way toward recovery of the patient, making the physician the head of the team and the nurse the coordinator.^{22,29}
3. Heart Surgery should apply only to the following:

A. Repair

1. Plastic Repair of Mitral Valve
2. Plastic Repair of Aortic Valve
3. Atrial Septal Defect Repair
4. Tetralogy Repair
5. Tricuspid Valve Repair
6. Ventricular Septal Defect Repair
7. Subaortic Stenosis Repair
8. Patent Ductus Repair
9. Coarctation Repair
10. Aortic Aneurysm Repair

B. Replacement

1. Mitral and Tricuspid Valve Replacement
2. Mitral Valve Replacement
3. Aortic Valve Replacement
4. Mitral and Aortic Valve Replacement
5. Triple Valve Replacement
6. Tricuspid Valve Replacement

C. Commissurotomy

1. Aortic Commissurotomy
2. Mitral Commissurotomy
3. Pulmonary Valve Commissurotomy

D. Valvulotomy

1. Aortic Valvulotomy
2. Mitral Valvulotomy

E. Other Chest Surgery

1. Pacemaker
2. Pericardiotomy
3. Pulmonic Valvulotomy
4. Patent Ductus Closure
5. Repair of Patent Foramen Ovale
6. Mitral Valve Plication
7. Annuloplasty of Mitral Valve

Assumptions

For purposes of this study, it was assumed that:

1. The questionnaire was structured to elicit responses usable for purposes of this study.
2. The persons to whom the questionnaire was sent would be willing and able to answer the questions accurately.
3. A significant number of such patients sampled with a questionnaire would be able to return to gainful employment.
4. The nurse would serve as a coordinator and expediter of rehabilitative services recommended by the surgical heart team.
5. The rehabilitation of an unknown percentage of the heart surgery patients is possible and contributes to the employment of the sampled population.

Limitations

The following limitations applied to this study:

1. The study was limited to information obtained by reviewing hospital charts of 329 heart surgical patients, who had survived more than 6 months after surgery, by information obtained from a mailed questionnaire and by phone interview when the questionnaire was not obtained.
2. The selected population, over the age of 15, consisted of those who had heart surgery between January, 1959 and April, 1965 at the University of Oregon Medical School Hospital.
3. This study did not attempt to investigate why rehabilitation services are or are not utilized to improve the patient's vocational status.

Procedure for Solution of the Problem

1. The literature was searched to discover how the problem of vocational status before and after heart surgery had been investigated by other authors. From the findings of two related studies a questionnaire was constructed in accord with the established and defined purposes of the study.
2. This study is part of a larger study investigating heart surgery patients, and permission to continue the study was obtained from:
Dr. Michael Baird, Assistant Medical Director of Hospitals & Clinics;
Dr. Paul Blachly, Associate Professor of Psychiatry;
Dr. Herbert Griswold, Professor of Cardiology;
Dr. Albert Starr, Chief of Cardiac Pulmonary Surgery.
3. From approximately 400 charts reviewed, 329 heart surgery patients were found to meet the following criteria:
 - a. over 15 years of age;
 - b. had heart surgery at the University of Oregon Medical School between January, 1959 and April, 1965;
 - c. thought to be alive six months post-operatively and at the time the questionnaire was mailed.
4. A questionnaire was constructed to meet the criteria of the study. Two related studies had used similar questionnaire items and data had been collected.^{13,24} This proved the validity of the questionnaire.
5. A schedule for questionnaire administration was set up after the questionnaire had met the approval of the above mentioned group.
6. A letter of explanation with a self-addressed, stamped envelope was mailed to 329 patients who met the study criteria. It was felt that a better than average rate of return would be obtained

if the letter were signed by persons these patients knew very well. (See Appendix A.)

7. The 329 questionnaires were mailed so as to permit four months for returns; 263 were obtained by the stated deadline, June, 1966.
8. The collected data were tabulated, interpreted, tables drawn and analyzed. The findings were described, the study summarized, conclusions drawn and recommendations made for further study.

Overview of Thesis

The study is divided into four chapters. Chapter I contains an introduction, statement and importance of the problem, its limitations, assumptions, and procedure for solution. Chapter II is devoted to a review of the literature and related studies. Chapter III describes the study, lists the findings and analyzes the results. The final chapter presents a summary, states the conclusions and makes recommendations for further study.

CHAPTER II

REVIEW OF THE LITERATURE

Need of Vocational Rehabilitation

Our society must recognize it has a moral responsibility to render assistance to those in the unpleasant role of the unemployed. With the ever increasing costs of welfare programs and hospitalization, demands are being made for subsequent integration of the patient back into a role of self-sufficiency, a productive vocation, or at least to some degree of self-care.^{6,23,29,32}

The term, rehabilitation, to many conveys only the limited meaning associated with physical rehabilitation. This concept is in contrast to the widely used definition of the National Conference on Rehabilitation, which states as follows:

Rehabilitation means the restoration of the handicapped to the fullest physical, mental, social, vocational and economic usefulness of which they are capable.²⁹

This definition reveals only one aspect of rehabilitation even though the economic, mental, social and vocational components are equally important to the individual in order to lead a more full and satisfactory life.^{21,22,29}

Dr. Howard Rusk prefers the following definition:

Rehabilitation is a program designed to enable the individual who is physically disabled, chronically ill or convalescing to live and work to the utmost of his capacity. It is an integral part of the clinical, non-institutional and community responsibility in meeting the problems of chronic illness.²⁵

These two definitions emphasize that any rehabilitation program,

to be effective, must be comprehensive. The need for teamwork among all the disciplines that come in contact with the so-called handicapped individual is self-evident.

Educators in nursing have been advocating that rehabilitation begins at the time the patient is admitted to the hospital, not waiting until the patient returns home under the sporadic care of the Public Health Nurse. This is particularly true of surgically treatable cardiac disease patients. Most of these patients will go back to work without formal help. Some can not return to work for they were not cured by surgery, but need continuing home nursing care. In order to appreciate the needs for rehabilitation services by patients after heart surgery, the extent of unassisted or spontaneous rehabilitation must be identified.^{11,27}

The modern concept of rehabilitation is divided into three phases by Terry, et al.: (1) "medical" phase, which is considered the therapeutic stage; (2) "conditioning" phase, where the patient makes the transition from hospital to home; and (3) "vocational" phase pertaining to the time the patient is prepared to undertake a job by the process of retraining.²⁹ In the first two phases the nurse's role is largest but reference was made by Bissonnette and Bonney that the nurse's role was just as large in phase three.^{3,4}

Because a nurse is a part of the very heart of the community, she is directly concerned not only with the medical phase of rehabilitation but also with the equally pertinent social and vocational aspects. Without such an identity with community endeavour, the nurse's role in rehabilitation is not completely fulfilled.⁴

Deaver in the article, "Rehabilitation," found in The American Journal of Nursing, stated a philosophy of rehabilitation programs as follows:

A rehabilitation program must be based on the philosophy that a person with a disability requires services which will help him to attain the most satisfactory physical, psychosocial, educational and vocational adjustment in the environment in which he must function for the remainder of his life.⁹

Authors Hungler, Katz, Knocke and Miller express similar opinions.¹⁶⁻¹⁹

Katz, et al. go one step further in the article, "Rehabilitation of the Cardiac Patient," stating:

There is a need for vocational evaluation and guidance. Proper rehabilitation rests upon the tripod of: (1) the sympathetic psychosomatically oriented and scientifically trained cardiologist; (2) the kindly psychiatrically trained medical social worker; and (3) the mature vocational counsellor. These three operating as a team, with the physician as their leader, in a society that recognizes work is as much the fashion as birth, death and taxes, will bring into proper balance the somewhat one-sided approach to cardiovascular disease practiced by many, with its over-emphasis on the acute dramatic phases and their spectacular alteration by therapy.¹⁷

The author maintains that the most crucial position of a nurse is that of the Public Health Nurse. Bonney felt that the magnitude of the patient's problems did not become realized until he returned home.⁴

But there was no mention of the nurse as a valuable member of this team. Was it an oversight to omit nurses from an active role on a team which emphasizes preventive medicine and rehabilitation?

Lazelle Knocke suggests in the article, "Role of the Nurse in Rehabilitation," that the nurse "does act more or less as a co-ordinator, where many varieties of services are available, such as occupational therapy, physical therapy, vocational guidance and others."¹⁸

Bonney in her article, "Rehabilitation of the Cardiac Patient," presents the problem of the adult cardiac patient from the viewpoint of the Public Health Nurse. She maintains that the Public Health Nurse is in a most crucial position to understand and attend to the full impact of the

patient's problems which may not become full blown until he returns home.⁴

Grace Bissonnette suggests in the article, "The Rehabilitation of the Employee With Heart Disease," that the industrial nurse is in an ideal position to serve as the pivotal person on the rehabilitation team. Miss Bissonnette states:

Chances are that the worker has come to know her and trusts her judgment. She may have been the one to give him emergency care if his heart attack occurred on the job; or she may have referred him for medical care for persistent symptoms. She can be a liaison between the patient and his supervisor and fellow workers. She may know his home situation; the community resources he might need and she is familiar with the services of these various agencies.³

Bissonnette also stated that the industrial nurse can help the physician immeasurably in facilitating the planning for long-term care and promoting proper coordination and timing of services.³

Oates, et al. emphasized this same point in their study when they found that a sufficient proportion of patients have been eager and willing to resume active and vocationally productive lives. Only those patients who lacked motivation had been the ones whose recovery period was longer than that of the average patient. These same patients had longer periods of medication and more limited physical activity. The researchers reported that a chief deterrent to return to gainful employment was the anxiety of the patient about his condition and unemployment for a number of years, despite the consensus of vocational counselor, medical social worker and cardiologist that the patient was definitely employable.²⁴

It is interesting to note that the United States is not the only country which feels that the vocational aspects of cardiac patients should be investigated. Dr. K. Hirasawa of Japan reported in 1964 in

"Heart Diseases and Rehabilitation After Heart Surgery" that in his country emphasis is being placed on restoration measures for cardiac rehabilitation. The measures he advocated are those used in physical therapy, but he made reference to the fact that in the near future vocational status and guidance programs would have to be studied.¹⁵

When the adult patient recognizes the fact that he will not be able to return to his former job, the nurse must assist the patient to utilize the available resources for vocational rehabilitation. The patient must be free of anxieties, worries and above all, depression. When these concerns are eliminated the patient can gain back a portion of his former self-esteem and motivation for returning to the pattern of daily life he knew when he was well.^{2,7,12,20,21,26}

Physicians interested in cardiovascular disease and rehabilitation organized a conference in 1956 supported by a grant from the National Heart Institute. The proceedings of the conference were stenotyped and presented in a volume edited by White, Rusk, Williams and Lee.³³

The participants commented on the variety of activities the American Heart Association did concerning the rehabilitation of the patient with cardiovascular disease. The activities were as follows:

1. Cardiovascular clinics established by local heart associations. These clinics may offer all medical services or only consultative diagnostic service.
2. Cardiac-in-industry programs concerned with employment of individuals with cardiovascular disease. The objectives are to evaluate the work potential of the cardiac patient and the demands of particular occupations, to educate professional personnel and the public as well, and to study the compensation

laws of the state. A subsection of the cardiac-in-industry program is the work classification unit. Such units include the selective placement of individual workers, the provision of vocational counseling services, and the establishment of sheltered workshops. There are about forty such units in the United States.

3. The heart-of-the-home program concerned with the evaluation of the cardiac housewife and also with the simplification of work in the home.
4. A continuing rehabilitation program under the direction of a standing committee of the American Heart Association with the following objectives:

-1. to develop an awareness of the rehabilitation concept among physicians, medical students, and members of co-professional groups and to encourage the teaching of rehabilitation in medical and other graduate and postgraduate curricula;
2. to stimulate public awareness, so that rehabilitation may assume its rightful place with the prevention and treatment of cardiovascular disease;
3. to develop studies, research, and demonstrations in the field of cardiovascular rehabilitation;
4. to develop community programs of rehabilitation.³³

These programs are available for all the cardiac patients throughout the United States, but their full potential has yet to be discovered by the communities.

White, Rusk, Lee and Williams in Rehabilitation of the Cardiovascular Patient stated: "Vocational rehabilitation is possible in from 20 to 40 per cent of patients who are able to complete a rehabilitation program."³⁴

This is very encouraging to patients who are not well motivated about returning to gainful employment. The adjustment of the patient must be considered within the framework of the patient's family and

particularly his community.^{6,28,30,31}

Depending on the degree of recovery and the opportunities available various levels of work can be considered for the surgically correctable patient.

Related Studies

The first study investigating the vocational rehabilitation of cardiac patients after heart surgery was that by Oates, Hickey and Bellinger, "Vocational Rehabilitation of Cardiac Surgical Patients," in 1957.²⁴ They studied 101 cases of 102 cardiac operations (one person operated on twice) in Massachusetts between April 24, 1952 and December 31, 1955 using case review as the principal research technic for data collection.

The authors wanted to test the effectiveness of a program for the vocational rehabilitation of cardiac patients in Massachusetts.

These patients were only those provided services by the Massachusetts Division of Vocational Rehabilitation. Of the 101 patients who had cardiac surgery, 89 had successful surgery, 74 had returned to work by the end of the study; 15 had not returned to gainful employment but were convalescing, under treatment, or in vocational training for a job; 2 were not helped by operation; and 10 had died.

The number of months between operations and return to work ranged from 1 to 22. The median number of months was 5. Forty-six (61.3%) of the group who had gone to work did so less than six months after surgery.

These operations were "closed" for they did not require cardiopulmonary bypass as did the operations reported later.

The researchers concluded: 1) Despite the general impression that

employment of cardiac patients presents serious problems in rehabilitation, heart disease is not an insurmountable obstacle to employment; 2) the financial problems imposed by cardiac surgery had been alleviated by the Massachusetts Division of Vocational Rehabilitation and many individuals and their families had been spared from applying to public assistance for medical care by these services; and 3) only by the cooperation of many agencies and individual physicians with the staff of the Division of Vocational Rehabilitation were these commendable results accomplished.¹³

No specific recommendations were made.

A later study by Goldberg and Spector, "Rehabilitation of Patients After Cardiac Surgery: A Follow-up Study," in Massachusetts reported in 1964 represents a group selected for vocational rehabilitation services.¹³

The participants consisted of 116 patients who had undergone cardiac surgery. The principal research technic was a mailed questionnaire. Other sources of data collection were case reports of the Massachusetts Rehabilitation Commission, hospital records, and reports of surgeons and cardiologists. An analysis of the data revealed 84 (72%) were living at the time the study was done; 21 patients were operative deaths and 11 died following discharge. Of the 84 patients living, 70 (83%) were employed and this figure was comprised of both individuals employed in the competitive labor market and individuals employed as homemakers. These two groups were considered as one for under the provisions of the Massachusetts Rehabilitation Commission, homemaking may be considered as gainful employment.

This study compared favorably with that of Oates et al. where 81%

who were living were employed whereas the current employment figure of Goldberg and Spector's study was 83%.

Goldberg and Spector stated that their results must be evaluated in terms of the population of which the study group was representative. This selected group came from a limited socioeconomic level. Many patients of this study may have deferred surgery due to financial difficulties and their health may have further deteriorated, which decreased their chances for successful outcomes.

The findings of this study led to the following conclusions:

1. The patients who survived the operation and are living are, on the whole, doing better than they did prior to the operation, and it is assumed that they are doing better than they would have if they had not undergone surgery.
2. The statistical chance of survival for this group as a whole-- 7 out of 10--is not as high as it is for some other disability groups with which vocational rehabilitation is concerned.

The following recommendations were made:

1. The present study should be extended through a period of five years after discharge. The post-operative period of two years is too short a period of time to be able to evaluate the final outcome.
2. There should be added to the study of this disability group a larger amount of information on the presurgical experience of these patients. This would enable the authors to make reliable clinical observations of their progress or impediments to progress throughout the various phases of their rehabilitation.
3. That more severely disabled patients be taken on as experimental

or demonstration cases, in which the criteria for acceptance would be broadened.

In 1964 Weinblatt et al. reported "Return to Work and Work Status Following First Myocardial Infarction." The authors investigated the work experience of 301 males between November, 1961 and April, 1963 who were enrolled in the Health Insurance Plan of Greater New York. The principal research technic was reviewing medical records to receive a baseline medical evaluation. The other sources for data collection were death certificates, hospital charts, medical examiner's records, and interviews with the next of kin. This case finding extended over a four-year period. The chief interest was the rate and extent of return to work in relation to a number of variables. The population investigated represented a wide occupational diversity. The widely diversified occupations were divided into two main occupational categories, white and blue collar. The study reported that three months after the first episode of myocardial infarction one in five men had returned to work; by 18 months three out of five had returned.³¹

One interesting finding was that the per cent who returned to work fell sharply beyond the six-month point and was negligible after 10 months have elapsed from the date of the myocardial infarction. It was concluded that if work had not been resumed by the time ten months had passed, there was little likelihood of a subsequent return.

Also, the per cent of men who returned to work over the 18-month period following infarction was inversely related to age, reaching 81% for men under 45 at the time of the myocardial infarction, 64% for those aged 45-54, and 53% for the oldest group (55-64).

This study compared the most active with the least active group; the ratio in favor of active men was 3:1 at three months after the myocardial infarction and almost 2:1 at the end of the 18-month period.

The researchers concluded:

1. That if patients had not resumed work by 10 months, there was little likelihood of a subsequent return.
2. That the relatively slow rate of return to work in the early months occurred among men considered to have had a very low over-all level of physical activity at the time of myocardial infarction.
3. That the apparent disadvantage in returning to work suffered by the blue collar workers as compared with white collar workers seemed to suggest a mechanism influenced by social features or conditions of employment rather than a medical one.
4. That the influence of the physicians' practice and employers in allowing blue collar workers to resume their jobs or to change their jobs, the possible role of workmen's compensation rulings, disability pensions, and the relative inflexibility of some jobs in offering less strenuous employment could contribute to some of the differences observed.

No specific recommendations were made.

Summary

In summary, the literature was reviewed to determine the needs of cardiac patients for vocational rehabilitation. Only two studies reported the use of vocational studies for such cardiac patients and one study reported the work experience after myocardial infarction.

There is general agreement in the literature concerning the nature and scope of rehabilitation. There is also agreement that for rehabilitation to be effective, it must be started before surgery if at all possible and rehabilitation includes physical, mental, social, vocational and economic factors.

Not all authors recognize the role of the nurse in the rehabilitation programs, but those who do emphasize the importance of the Public Health and the Industrial Nurses. These two key nurses were emphasized because they are in strategic positions from which to investigate the home before the surgical cardiac patient is discharged from the hospital. These positions also permit the intimate contact necessary with the patient's family for home care.

The two related studies of Oates, et al. and Goldberg and Spector in rehabilitation after heart surgery seemed to concentrate on fact finding and reported 81% and 83% respectively of their participants had returned to gainful employment. Weinblatt's study investigated the work experience among males with a first myocardial infarction and presented findings that correlate with the findings of Goldberg and Spector and Oates, et al.

The conclusions that were drawn from their findings were as follows:

1. The serious problems in rehabilitation of cardiac patients are not an insurmountable obstacle to employment.
2. Many financial problems of the patients had been alleviated by the Division of Vocational Rehabilitation.
3. Excellent results of the studies were made possible by the cooperation of many agencies and physicians.
4. Surviving patients are doing better than they did prior to cardiac surgery.

5. The statistical chance of survival for this group is not as high as it is for other disability groups with which vocational rehabilitation is concerned.
6. That if gainful employment had not been obtained by the end of 10 months, there was little likelihood of a subsequent return.
7. That return to work was inversely related to age.

The recommendations from the literature were as follows:

1. That post-operative studies be extended from 2 to 5 years after discharge to be able to evaluate final outcomes.
2. There should be more information on the presurgical experience to make reliable clinical observations of progress throughout the various phases of rehabilitation.
3. More severely disabled patients to be added as experimental cases in which the criteria for acceptance by the Department of Vocational Rehabilitation would be broadened.

CHAPTER III
REPORT OF THE STUDY

Procedure

This study, a part of a larger ongoing study, was undertaken in an effort to determine the vocational status of patients before and after heart surgery. The literature was reviewed to develop a frame of reference and to determine how related studies had investigated this problem. Two studies, Oates, et al. and Goldberg and Spector, had reported findings of a similar nature, using a mailed questionnaire as part of their data collection.^{13,24}

After obtaining permission to conduct the study from a group representing the Departments of Cardiology, Cardiopulmonary Surgery, Outpatient Clinics and Psychiatry, a questionnaire (Appendix B) was designed to answer a variety of questions about vocational and physical status. The questionnaire was patterned after that of Goldberg and Spector.¹³

A cover letter of explanation was also developed, but it was the suggestion of the aforementioned group that the letter (Appendix A) that accompanied the questionnaire (Appendix B) be signed by two physicians who the patients knew in order to insure the best rate of return.

The names, addresses, telephone numbers, hospital unit numbers and diagnostic classifications of the selected population were obtained from a current file of cardiac patients found in the office of the Assistant Director of the Outpatient Clinics at this institution.

The questionnaire was submitted by mail to all the patients over

the age of fifteen who had cardiac surgery at the University of Oregon Medical School Hospital between January, 1959 and April, 1965, and who were thought to be alive six months after surgery. Both "open" and "closed" surgical procedures were included although the former predominated.

The letter of explanation of the study (Appendix A) with the accompanying questionnaire (Appendix B) was mailed with a self-addressed stamped envelope to 329 cardiac surgical patients in December of 1965. A second letter and questionnaire were sent to non-respondents in February of 1966 and an attempt was made to contact the remaining non-respondents by telephone in June of 1966. A small number of the sampled population was lost due to death or change of address when no forwarding addresses were found.

The questionnaire items 1-6, 9 and 14 were devised for the purposes of this study. Only these items will be reported within the content of this thesis. The remaining items 7-8 and 10-13 were appended for the purposes of the total study by the aforementioned group. Those results and findings will be reported elsewhere.

The areas the questionnaire dealt with were related to the date the participants quit work prior to surgery, the date they returned to either part-time or full-time employment, their current employment status, reasons relating to change or anticipating change of vocations and any additional comments the respondents wished to make.

After development of a suitable code (Appendix C) the data (Appendix D) collected from returned questionnaires, hospital research and telephone contacts were placed on individual needle punch cards (Appendix E).

Analysis of Data

The structured questionnaires were sent out to 329 patients and completed questionnaires were received from 263 respondents or 80% by the stated deadline of June, 1966. Fourteen or 5.3% of the 263 questionnaires were completed by telephone contact.

The respondents represented 276 operations on 263 patients. Eleven of these patients had undergone two heart operations and one patient had had three operations all within the same period under investigation. The data were analyzed as if there were 13 additional patients ($276-263=13$).

Nineteen of the 329 patients, or 6%, had expired within six months after surgery and no data were received on them. Five respondents of the 329, or 1%, erroneously were sent questionnaires when they had had only cardiac catheterizations, not cardiac surgery. These were classified as non-applicable. Eleven per cent or 35 of the 329 questionnaires were not returned, even though a second request was sent and telephone contact was tried. Two per cent or 7 of the questionnaires were returned with post office notations of being unable to locate due to change of address with no forwarding address. This was thought to mean that the patients could have moved or expired and no relatives or friends had contacted the Cardiac Evaluation Program secretary.

Plate 1, a circle graph, represents the distribution of the sampled population according to the questionnaires returned.

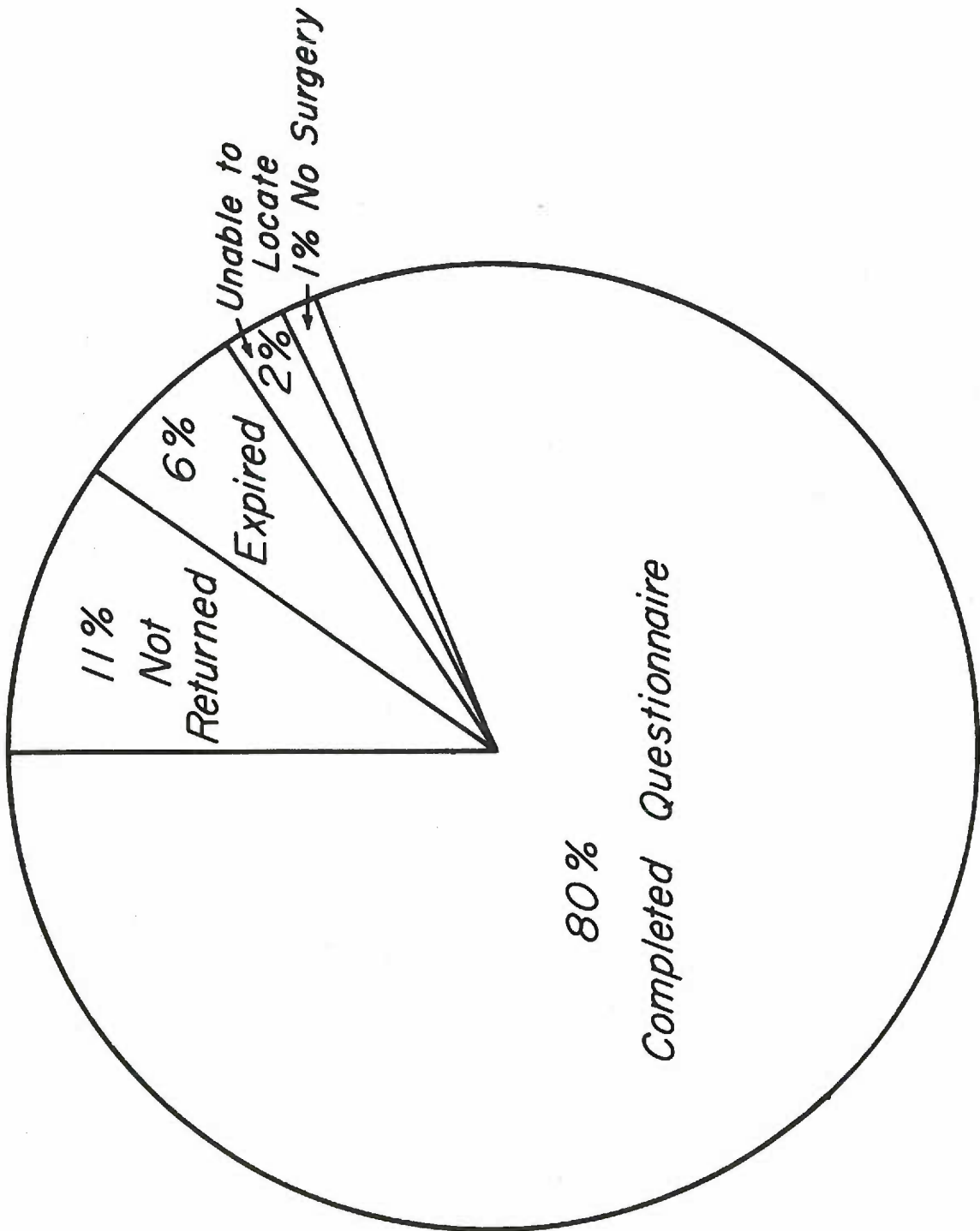


PLATE 1. Replies to 329 Questionnaires

The participants included 128 (46%) males and 148 (54%) females. There were 17 different surgical operations performed on the 276 patients. Plate 2, the bar graph, illustrates the kind and frequency of the 17 surgical operations, the sex distribution of each operation, the age range and the mean age.

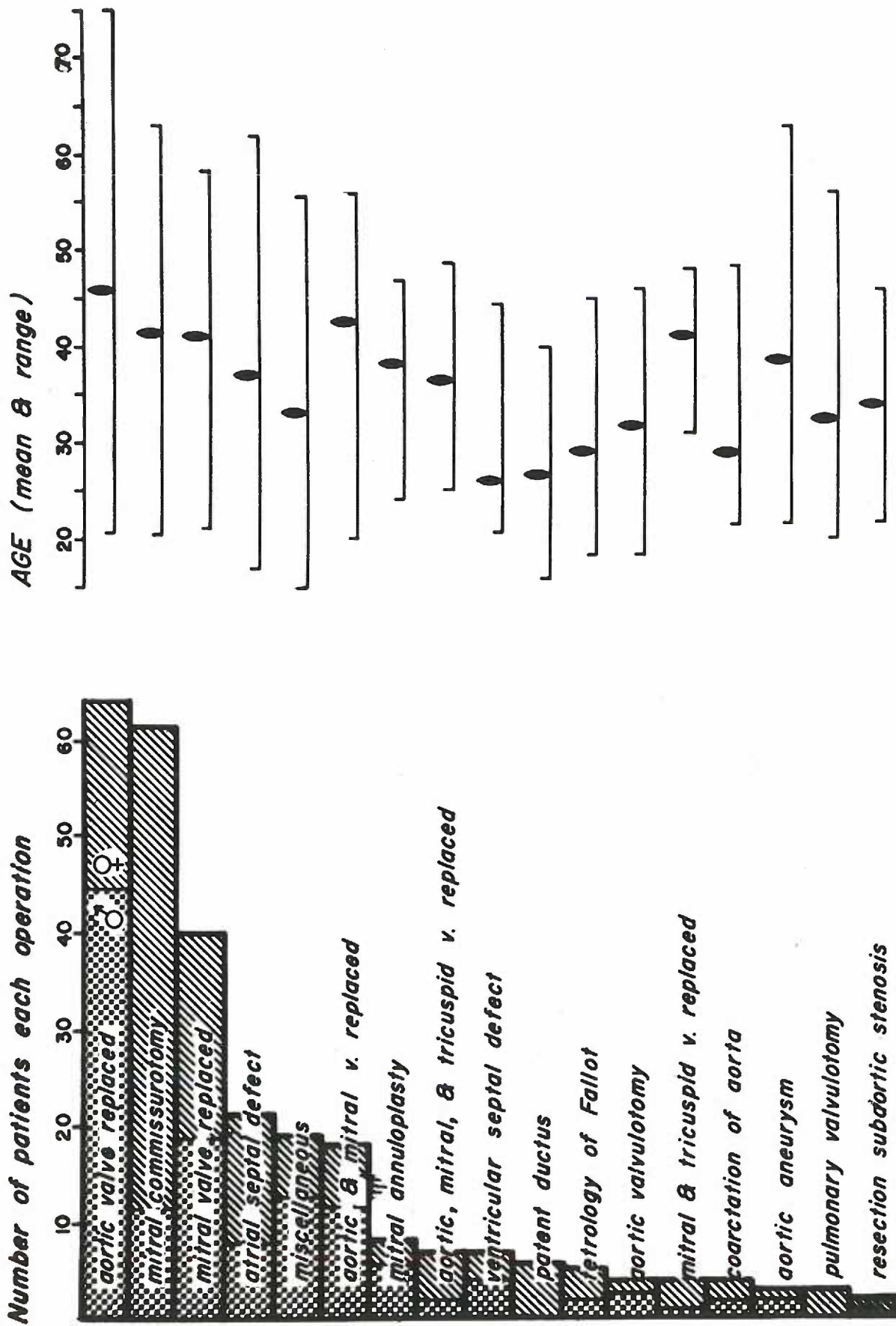


Plate 2. Distribution of Patients, Their Sex, Age Range and Mean Age

Category number V, labeled Miscellaneous in Plate 2, lists infrequently done cardiac surgical procedures. Table 1 shows the distribution of the 19 miscellaneous heart surgical patients and their sex.

TABLE 1. Distribution of 19 Miscellaneous Heart Surgery Patients According to Their Sex

Surgical Procedures (1)	Male (2)	Female (3)	N (4)
Pericardectomy	6	3	9
Insertion of Pacemaker	1	2	3
Removal of Mitral Valve			
Thrombosis.....	1	0	1
Aortoplasty with Teflon Patch.....	1	0	1
Repair of Ventriculoatrial Shunt..	1	0	1
Dissection of Aorta.....	1	0	1
Reconstruction of Subclavian			
Artery by Prosthesis.....	1	0	1
Repair of Coronary Fistula.....	0	1	1
Repair of Chordae Tendinae.....	1	0	1
Total	13	6	19

Questionnaire items 1, 2 and 3 were related to the time patients quit work pre-operatively, the time they returned to work post-operatively, full time work and types of work. The various types of work will be handled in Table 2. It was found that there was no gross difference between males and females as to their rate of return to work.

The findings of this study are depicted in a manner consistent with the presentation of the entire study, of which this is a part. The pertinent data was placed on plates which are reproduced here.

The most frequent operation of this study was the aortic valve replacement for it was in this hospital that the first effective ball valve was perfected.

Plate 3 demonstrates the relationship of time patients quit work to

the time they returned to work in four representative operations. Inspection reveals that there is a slightly later return to work of the aortic valve group. It can also be seen that the longer patients continue working pre-operatively the sooner they are likely to return to work post-operatively. The aortic valve group compared to the mitral commissurotomy group demonstrates that the mitral group quit sooner and returned earlier than the aortic group. Plate 3 illustrates the relation of time the patients quit work to time they returned to work in four representative operations.

Males: • Females: x

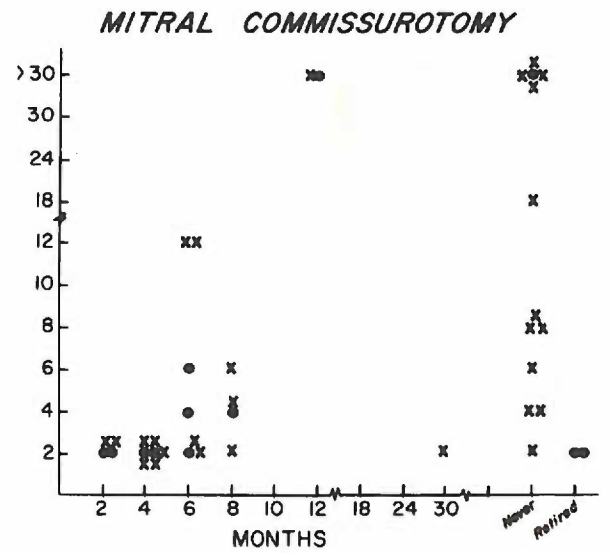
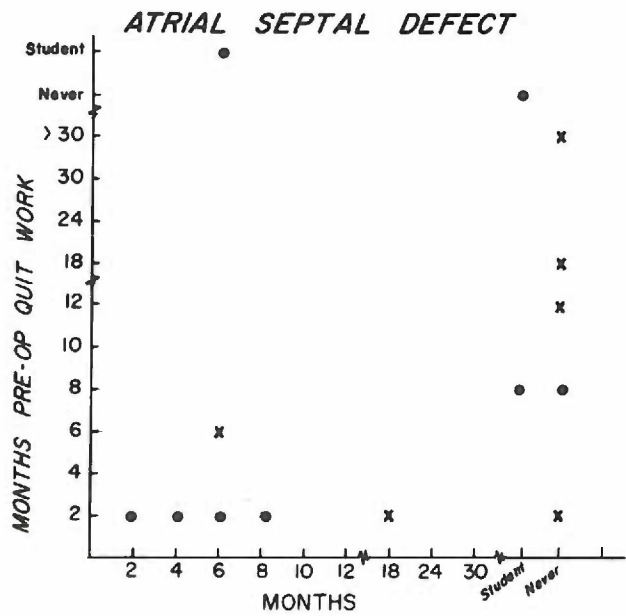
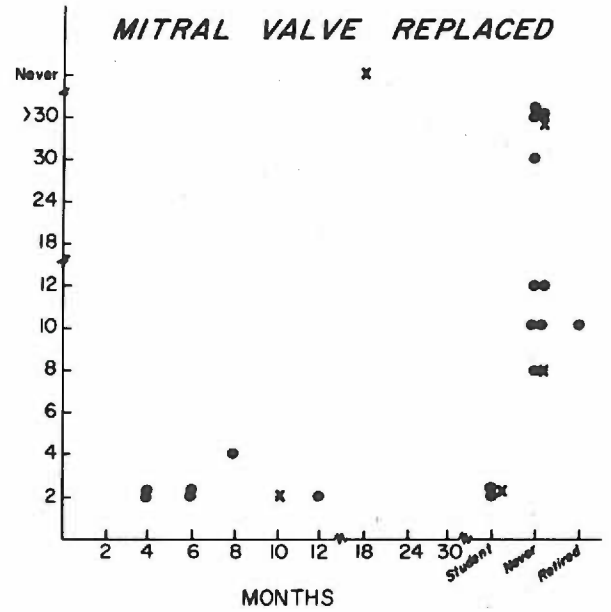
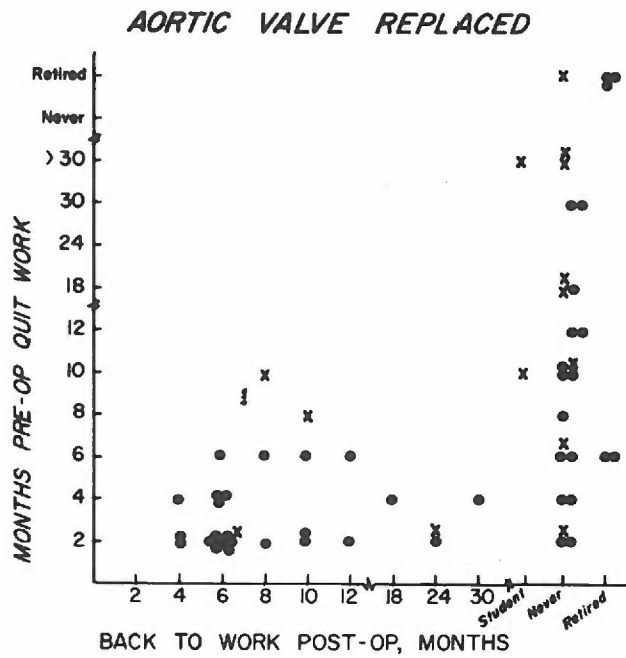


Plate 3. Relationship of Time Quit Work to Time Returned to Work in Four Representative Operations

The remaining parts of questionnaire items 1, 2 and 3 were related to the types of vocations the participants had had pre-operatively as compared to those they had post-operatively. It was not surprising to find 90 different types of vocations represented by the 276 respondents.

It is recognized that respondents may interpret the questionnaire item regarding their vocational description differently. For the purposes of this study the vocations were listed the same as those on the hospital records. Specifically, the listing consists of the types of vocations the patients stated they held just prior to surgery, not the vocation for which they had been trained. To illustrate, some respondents had been teachers, but had not held a teaching or other position prior to heart surgery; hence in the study they are listed as unemployed. Table 2 illustrates the distribution of 276 participants according to their vocation and sex before and after heart surgery.

TABLE 2. Distribution of 276 Participants According to Vocation and Sex Before and After Heart Surgery

Vocations (1)	Males		Females	
	Pre-op. (2)	Post-op. (3)	Pre-op. (4)	Post-op. (5)
Accountant.....	1	1	2	1
Artist.....	0	0	1	1
Attendant, Laundromat.....	0	0	1	1
Banker.....	2	1	0	0
Bartender.....	0	0	1	0
Beauty Operator.....	0	0	1	0
Bookkeeper.....	1	1	8	3
Cannery Worker.....	1	0	6	5
Caretaker.....	1	0	0	0
Carpenter.....	5	4	0	0
Clerical.....	4	5	7	10
Cloth Inspector.....	0	0	1	0
College Professor.....	2	2	0	0
Concrete Block.....	1	0	0	0
Construction.....	2	1	0	0
Correction Officer.....	1	1	0	0
Crane Operator.....	3	1	0	0
Dental Technician.....	0	0	2	1
Domestic Worker.....	0	0	1	0
Draftsman.....	2	2	0	0
Electronic Technician.....	1	1	0	0
Engineer.....	3	1	0	0
Farmer.....	5	2	0	0
Field Auditor.....	1	0	0	0
Fire Alarm Installer.....	1	1	0	0
Forester.....	4	0	0	0
Funeral Director.....	1	1	0	0
Garbage Collector.....	1	1	0	0
Gardener.....	2	0	0	0
Gas Station Attendant.....	3	0	0	0
Graduate Student.....	1	1	0	0
Heavy Equipment Operator.....	1	2	0	0
Hotel Desk Clerk.....	1	1	0	0
Housewife.....	0	0	75	97
Inmate, State Penitentiary.....	0	0	1	1
Janitor.....	2	1	0	0
Laborer.....	2	0	0	0
Licensed Practical Nurse.....	0	0	1	1
Livestock Buyer.....	1	1	0	0
Logger.....	9	6	0	0
Longshoreman.....	2	0	0	0
Lumber Employee.....	2	0	0	0
Machine Inspector.....	1	1	0	0
Machinist.....	2	0	0	0

(concluded on next page)

Table 2. (concluded)

Vocations (1)	Males		Females	
	Pre-op. (2)	Post-op. (3)	Pre-op. (4)	Post-op. (5)
Mail Carrier	0	1	0	0
Maintenance Supervisor.....	1	0	0	0
Meat Wrapper	0	0	1	1
Mechanic	3	3	0	0
Millworker	2	1	0	0
Minister.....	1	1	0	0
Navy	0	1	0	0
Nurse's Aide	0	0	1	1
Nursery Worker.....	1	0	0	0
Office Manager.....	1	0	0	0
Park Division Employee	1	0	0	0
Pharmacist.....	1	1	0	0
Photo Lab Developer	0	0	1	1
Post Office Employee.....	1	0	0	0
Potato Grader.....	0	0	1	0
Press Operator	1	0	0	0
Priest	1	1	0	0
Psychiatric Aide.....	0	1	0	0
Railroad Clerk	1	1	0	0
Ranch Foreman	1	1	0	0
Real Estate Broker.....	3	2	0	0
Receptionist.....	0	0	1	0
Registered Nurse	0	0	4	1
Repairman.....	3	1	0	0
Restaurant Cook	0	1	1	0
Retired	3	9	0	0
Sales Work	5	3	3	4
Sanitary Inspector.....	0	1	0	0
Sawmill.....	2	0	0	0
Secretary	0	0	9	5
Ship Fitter	1	1	0	0
Shipping Clerk.....	1	0	0	0
State Beauty Shop Inspector.....	0	0	1	0
Steel Mill.....	1	1	0	0
Stenographer.....	0	0	1	0
Structural Iron Work	1	0	0	0
Student	8	5	6	3
Switchboard Operator.....	1	1	0	0
Teacher.....	2	1	3	3
Textile Worker	1	1	0	0
Timber Cruiser.....	1	1	0	0
Truck Driver	3	5	0	0
Typist.....	0	0	2	2
Unemployed	3	35	1 ^a	2 ^a
Water Superintendent	1	1	0	0
Waitress	0	0	5	2
Vocational Rehabilitation Trainee	0	7	0	2
Total.....	128	128	148	148

^aUnemployed in female means unable to do housework or hold a job at this time

The wide distribution of occupations may be noted from the above table. A comparison was then made of the percentage of those employed before and after surgery in each of the 17 surgical procedures.

There was a decrease in the rate of return to work in the post-operative period for participants who had had nine of the surgical procedures, but the rate increased for two. In six of the procedures the rate remained the same for pre- and post-operative periods. Table 3 illustrates the distribution of 276 participants according to percentage of employment before and after heart surgery and percentage of increase or decrease.

Table 3. Distribution of 276 Participants According to Per Cent of Employment Before and After Heart Surgery and Percentage of Change.

Surgical Procedures	Total	Employment		Change	Increase + Decrease -
		Before	After		
(1)	(2)	(3)	(4)	(5)	(6)
Aortic valve replaced	64	97%	75%	22%	-
Mitral commissurotomy.....	61	100%	84%	16%	-
Mitral valve replaced.....	40	100%	75%	25%	-
Atrial septal defect.....	21	100%	86%	14%	-
Miscellaneous.....	19	95%	90%	5%	-
Aortic and mitral valve replaced.....	18	100%	86%	14%	-
Mitral annuloplasty.....	8	100%	88%	12%	-
Aortic, mitral & tricuspid valve replaced.....	7	100%	86%	14%	-
Ventricular septal defect.....	7	86%	100%	14%	+
Patent ductus.....	6	100%	83%	17%	-
Tetralogy of fallot.....	5	100%	100%	0%	same
Aortic valvulotomy.....	4	100%	100%	0%	same
Mitral and tricuspid valve replaced.....	4	100%	100%	0%	same
Coarctation of aorta.....	4	100%	100%	0%	same
Aortic aneurysm.....	4	100%	100%	0%	same
Pulmonary valvulotomy.....	3	67%	100%	33%	+
Resection subaortic stenosis....	2	100%	100%	0%	same

Within the operative groups, it was found that the age of the patient has little to do with the time of the patient returning to work. Older

patients returned to work as promptly as younger patients post-operatively, although a larger number of older patients never returned to gainful employment. Among the mitral valve replacements, cerebral vascular accidents account for the largest number of those who did not return to work.

Plate 4 demonstrates relationship of age to month returned to work in three representative operations.

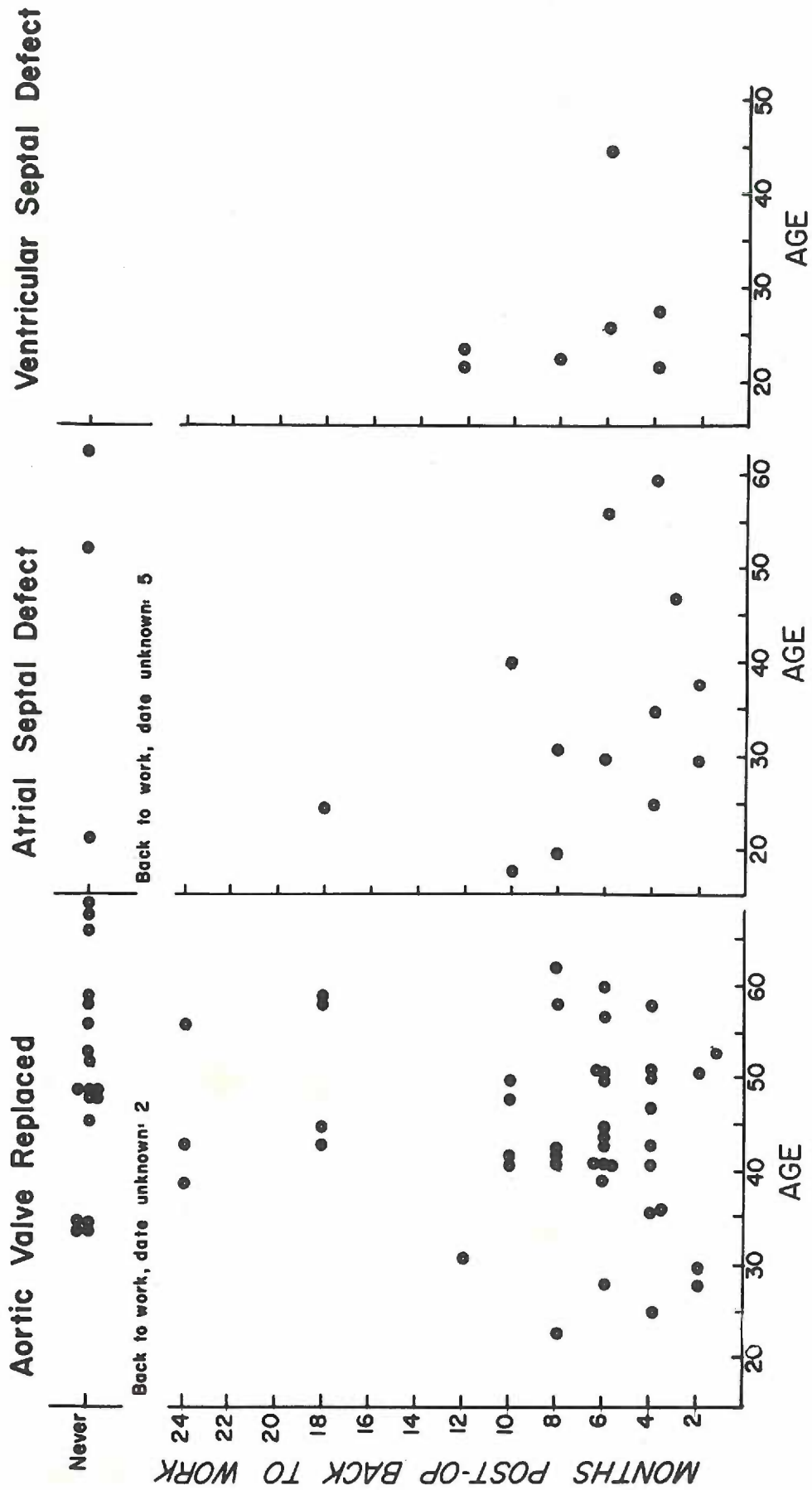


Plate 4. Relationship of Age to Month Returned to Work in Three Representative Operations

Item 4 inquired about the change of jobs and reasons for the change. Of the 276 respondents only 71 or 26% answered item 4.

Health problems are listed as the number one reason for the respondents' change, which is not too surprising considering the type of surgical procedures that were done. Table 4 illustrates the categorized reasons given by 71 respondents for change of employment after heart surgery.

TABLE 4. Reasons Given by 71 Respondents for Change of Employment After Heart Surgery

Reasons for Change (1)	Percent (2)	N (3)
Health problems	21.1%	15
Lighter work	15.5%	11
Miscellaneous.....	14.1%	10
Became student.....	8.5%	6
Better pay.....	7.1%	5
Rehabilitation training.....	7.1%	5
Retired.....	7.1%	5
Lack of business, sold	7.1%	5
Changed, no reason given.....	4.2%	3
Recommended by physician	4.2%	3
Student to job.....	4.2%	3
Total	100.2%	71

Item 3 of Table 4, labeled Miscellaneous, consisted of the following responses: "became full time housewife," "didn't like working environment," "became self-employed," and "my employer released me from my job."

Questionnaire item 5 was related to anticipation of job change by the participants. Of the 276 participants only 29 or 9.5% answered this item. Table 5 shows the reasons given by 29 respondents for anticipating a change of work.

Table 5. Reason given by 29 Respondents for Anticipating a Change of Job

Reason for Anticipating Change (1)	Percent (2)	N (3)
Obtain lighter work.....	51.6%	15
Student to job	13.8%	4
Obtain better pay.....	6.9%	2
Undergo rehabilitation training.....	6.9%	2
Irrelevant answers.....	6.9%	2
Plan retirement.....	6.9%	2
Plan self-employment.....	3.8%	1
Plan to quit job & become a housewife	3.8%	1
Total.....	100.6%	29

Item 5 of the above table labeled "irrelevant answers" contains "unable to find a job" as reported by two of the respondents.

Questionnaire item 6 inquired as to the reasons the respondents were unemployed at the time the questionnaire was completed. Of the 276 participants, 142 respondents answered the item. Whereas 142 respondents answered the item concerning reasons for being unemployed, according to Table 3, 151 or 55% should have given their reasons. This leaves 3% who did not reply to item 6. The interpretation of the item by the respondents cannot be investigated at this time. Table 6 shows the categorized reasons given by 142 or 51% of the respondents for being unable to find employment.

Table 6. Reasons Given by 142 Respondents for Being Unable to Work

Reason for Being Unable to Work	Percent	N
(1)	(2)	(3)
Health problems.....	57.6%	82
Tire easily.....	14.1%	20
Do not feel I could hold a job.....	7.0%	10
Rehabilitation training	5.6%	8
Home situation does not permit a job...	4.2%	6
Unable to find a light job.....	3.5%	5
Age against me	2.8%	4
Advised by physician not to work	2.8%	4
Retired	2.1%	3
Total.....	100.4%	142

Questionnaire item 9 was related to the daily activities of those respondents who were not regularly employed. The 171 respondents reported 193 different activities. Some of the respondents gave more than three activities, whereas some listed only one activity. The reasons given by respondents were categorized for Table 7.

It was sufficient to note that some of the housewives who did not hold a job outside of the home listed an average day's activities. Such respondents were not listed as unemployed for the purposes of this study, hence not included in this table. Table 7 illustrates the distribution of 193 representative daily activities reported by 171 unemployed respondents.

TABLE 7. Distribution of 193 Representative Daily Activities Reported by 171 Unemployed Respondents

Activities	Percent	N
(1)	(2)	(3)
Light housework	39.2%	76
Average housework.....	16.1%	31
Miscellaneous.....	14.0%	27
Walking.....	8.3%	16
Attend school.....	5.2%	10
Light yard work.....	4.1%	8
Light farm chores.....	4.1%	8
Light repairs about house.....	3.1%	6
Do nothing but sit.....	3.1%	6
Help neighbors.....	2.6%	5
Total.....	99.8%	193

Item 3 of Table 7 labeled "miscellaneous," includes "baby sitting," "sewing," "volunteer work," "church visiting," "missionary for Mormon Church," "part-time teaching" and "creative writing."

Item 14 invited any additional comments the respondents wished to make. There were responses by 201 of the 276 participants or 72%.

Table 8 shows the distribution of categorized comments made by 201 respondents concerning their experiences during and following hospitalization for cardiac surgery.

TABLE 8. Distribution of Comments Made by 201 Respondents Concerning Their Experiences During and Following Heart Surgery

Comments	N	Percent
(1)	(2)	(3)
Developed highest esteem for staff.....	118	58.4%
Miscellaneous.....	17	8.4%
Developed other health problems.....	16	7.9%
Appreciated interest.....	11	5.4%
Had problems with nurse.....	9	4.5%
Had cerebral vascular accident.....	7	3.5%
Acquired normalcy.....	7	3.5%
Had successful surgery briefly.....	6	3.0%
Wanted more surgery.....	4	2.0%
Did not prepare families for home care.....	3	1.5%
Did not understand the question.....	3	1.5%
Total	201	99.6%

Item 2 of Table 8 labeled "miscellaneous" contained such items as "had to wait too long before operation," "unpleasant roommate," "had family fill this out," "wish an appointment," "nurses didn't answer the bell as fast as they should" and "had a baby by C-section."

CHAPTER IV

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This study, a part of a larger ongoing study, was conducted in an effort to determine the vocational status of patients before and after heart surgery.

After obtaining permission to conduct the study, a questionnaire was designed to answer various questions about vocational and physical status.

Respondents were asked to indicate the dates they quit work before surgery, dates they returned to gainful employment and types of vocations before and after surgery. The respondents were also asked to indicate the reasons for change of jobs, if they anticipated a change and to state what kind, if they were unable to work at the present time and to state the reasons and if not regularly employed, to list an average day's activities. The last questionnaire item invited additional comments the respondents wished to make.

A cover letter was prepared and signed by two physicians known well by the patients.

The names, addresses, telephone numbers, hospital unit numbers and diagnostic classifications of the sampled population were obtained from a current file of cardiac patients found in the office of the Assistant Director of the Outpatient Clinics at this institution.

The cover letter with the accompanying questionnaire was mailed with a self-addressed stamped envelope to 329 cardiac surgical patients in December of 1965. A second letter and questionnaire were sent to

non-respondents in February of 1966 and an attempt was made to contact the remaining respondents by telephone in June, 1966. Of the 329 mailed questionnaires, 249 were returned; 14 questionnaires were completed by telephone, making the total of 263 or 80% returned by the stated deadline of June, 1966.

Conclusions

The following conclusions are made from this study:

1. That if surgical cardiac patients had quit work more than six months before surgery, there is little likelihood that they would return to a gainful employment. If patients have not returned at the end of one year, they probably never would return to gainful employment. This seems to be consistent with findings of Oates, et al. and Goldberg and Spector.
2. That age is not a determining factor for returning patients to work for either the male or the female.
3. The number of serious problems that the cardiac surgical patients present in terms of rehabilitation were not an impossible obstacle to gainful employment.

Recommendations

As a result of the findings of the vocational status of patients before and after heart surgery, the following recommendations are made:

1. The role of the nurse could be that of an expediter in the rehabilitation phase of the cardiac surgical patient. The nurse in this role may find it more feasible to seek further training in the field of vocational guidance.
2. The patients should have a vocational evaluation at the time that surgery is indicated. This would be done several months before

cardiac surgery is done.

3. The post-operative studies should be extended from five years throughout life of the cardiac patient. This could be possible through a longitudinal study.

Recommendations for Further Studies

1. An exploration study could be performed to discover what the lines of communication are between the patient and various agencies handling the vocational guidance of the heart patient.

2. A follow-up study of the patients who have completed training through the Division of Vocational Rehabilitation to see if the additional retraining was essential or how it contributed to gainful employment.

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APPENDICES

APPENDIX A

SAMPLE OF LETTER WHICH ACCOMPANIED THE QUESTIONNAIRE

December 10, 1965

Patient's Name

Address

Dear

As part of a continuing effort to evaluate the adjustment of patients after heart surgery, would you kindly complete this questionnaire and return it to us in the stamped, self-addressed envelope? This information is very important for your case records.

Although all of the questions may not apply specifically to you, please answer the best you can.

Thank you in advance for your cooperation.

Sincerely,

Michael D. Baird, M. D.
Clinic Administrator

Albert Starr, M. D.
Chief, Cardiopulmonary Surgery

APPENDIX B
QUESTIONNAIRE

QUESTIONNAIRE

PATIENT'S NAME _____

PATIENT'S ADDRESS _____

PHONE _____

*1. Date of last employment before surgery and type of work _____*2. Date returned to work after surgery and type of work _____

*3. Date returned to work full-time and type of work _____

*4. If you have changed jobs state reason _____

*5. Do you anticipate a change of work soon? _____ If so, what kind?

*6. If unable to work at the present time state reason _____

7. Do you feel you benefited from the operation? Yes ___ No ___ If
so, how? _____

8. What complaints do you still have related to heart disease? _____

*9. If not regularly employed, list an average day's activities _____

10. How did the operation affect your nerves? _____

11. How did the operation affect your outlook on life or personality?

12. What is your most vivid unpleasant recollection of your stay in the hospital during surgery? _____

13. What is your most vivid pleasant recollection of your stay in the hospital during surgery? _____

*14. Additional comments _____

* Starred items constructed for purposes of this study.

APPENDIX C
PUNCH CARD CODE

PUNCH CARD CODE - HEART SURGERY REHABILITATION

1-4

Ages

- 1 15-19
- 2 20-24
- 3 25-29
- 4 30-34
- 5 35-39
- 6 40-44
- 7 45-49
- 8 50-54
- 9 55-59
- 10 60-64
- 11 over 65

5

Sex- Punch Males Only

6

Previous Operation - Punch if Positive +

7

Punch if Something Unusual

8

9-12

Surgical Procedures

- 1 Mitral Commissurotomy, Closed
- 2 Mitral Valve Replacement
- 3 Aortic Valve Replacement
- 4 Combined Mitral and Aortic Valve Replacement
- 5 Plastic Repair of Mitral Valve
- 6 Plastic Repair of Aortic Valve
- 7 Coarctation Repair
- 8 Aneurysm, Aortic Repair
- 9 ASD Repair
- 10 Tetralogy Repair

13-16

Surgical Procedures

- 1
- 2 Pulmonary Valve Commissurotomy
- 3 Tricuspid Valve Repair
- 4 Tricuspid Valve Replacement
- 5 Other Chest Surgery Not Listed (Pacemaker, Repair of Patent Foramen Ovale, Pericardiectomy)
- 6 Aortic Valvulotomy
- 7 VSD Repair
- 8 Subaortic Stenosis Repair
- 9 Triple Valves
- 10 Mitral Valvulotomy
- 11 Patent Ductus Repair
- 12 Mitral and Tri-Valve Replacement
- 13 Aortic Commissurotomy
- 14

17-19 Functional Class

- 1 I
- 2 II
- 3 III
- 4 IV

20

21-24 Number of Weeks Post-Operative

- | | | | |
|---|-------------------|----|--------------------|
| 1 | Less than 1 week | 9 | Less than 9 weeks |
| 2 | Less than 2 weeks | 10 | Less than 10 weeks |
| 3 | Less than 3 weeks | 11 | Less than 11 weeks |
| 4 | Less than 4 weeks | 12 | Less than 12 weeks |
| 5 | Less than 5 weeks | 13 | Less than 13 weeks |
| 6 | Less than 6 weeks | 14 | Less than 14 weeks |
| 7 | Less than 7 weeks | | and over |
| 8 | Less than 8 weeks | | |

25-28 Anesthesia Time

- | | | | |
|---|-------------------|----|--------------------|
| 1 | Less than 1 hour | 8 | Less than 8 hours |
| 2 | Less than 2 hours | 9 | Less than 9 hours |
| 3 | Less than 3 hours | 10 | Less than 10 hours |
| 4 | Less than 4 hours | 11 | Less than 11 hours |
| 5 | Less than 5 hours | 12 | Less than 12 hours |
| 6 | Less than 6 hours | 13 | Less than 13 hours |
| 7 | Less than 7 hours | 14 | Less than 14 hours |

29-32 Before O. R. - worked up to

- 1 2 months before O.R.
- 2 4 months before O.R.
- 3 6 months before O.R.
- 4 8 months before O.R.
- 5 10 months before O.R.
- 6 12 months before O.R.
- 7 18 months before O.R.
- 8 24 months before O.R.
- 9 30 months before O.R.
- 10 36 months or more years before O.R.
- 11 No occupation before O.R. (Student or not trained, could not work or retired)
- 12 Part-time housework - no dates
- 13
- 14

33-36 Worked part-time after O.R.

- 1 Less than 2 months after O.R.
- 2 Less than 4 months after O.R.
- 3 Less than 6 months after O.R.
- 4 Less than 8 months after O.R.
- 5 Less than 10 months after O.R.

33-36 (cont.)

- 6 Less than 12 months after O.R.
- 7 Less than 18 months after O.R.
- 8 Less than 24 months after O.R.
- 9 Less than 30 months after O.R.
- 10 Less than 36 months after O.R.

37-40 Worked Full Time After O.R.

- 1 Less than 2 months after O.R.
- 2 Less than 4 months after O.R.
- 3 Less than 6 months after O.R.
- 4 Less than 8 months after O.R.
- 5 Less than 10 months after O.R.
- 6 Less than 12 months after O.R.
- 7 Less than 18 months after O.R.
- 8 Less than 24 months after O.R.
- 9 Less than 30 months after O.R.
- 10 Less than 36 months after O.R.
- 11 More than 40 months after O.R.
- 12 Never returned to job as of now
- 13 Student Returned to School
- 14 Returned to Work - No Date Stated

41-44 Part-Time Housework - Returned:

- 1 Less than 2 months after O.R.
- 2 Less than 4 months after O.R.
- 3 Less than 6 months after O.R.
- 4 Less than 8 months after O.R.
- 5 Less than 10 months after O.R.
- 6 Less than 12 months after O.R.
- 7 Less than 18 months after O.R.
- 8 Less than 24 months after O.R.
- 9 Less than 30 months after O.R.
- 10 Less than 36 months after O.R.
- 11 No date as to when returned

45-48 Full-Time Housework - Returned:

- 1 Less than 2 months after O.R.
- 2 Less than 4 months after O.R.
- 3 Less than 6 months after O.R.
- 4 Less than 8 months after O.R.
- 5 Less than 10 months after O.R.
- 6 Less than 12 months after O.R.
- 7 Less than 18 months after O.R.
- 8 Less than 24 months after O.R.
- 9 Less than 30 months after O.R.
- 10 Less than 36 months after O.R.
- 11 Full-time housework, but patient told no time when she returned
- 12 Able to do no work at all or only a little due to CVA or other limitation - another operation

49-52 If now unemployable due to:

- 1 CVA
- 2 Multiple Amputations
- 3 Retirement or "age against me"
- 4 Health does not permit
- 5 Shortness of breath
- 6 Tires easily and has weariness
- 7 Chest pain
- 8 Spouse does not wish her or him to return to job
- 9 Pregnancy or home responsibilities
- 10 Work too hard (does not feel he or she could hold down a job - no experience or unable to find lighter work)
- 11 Other - dizzy, fainting spells, nerves, impaired circulation, headaches, retention of fluid
- 12 More surgery soon
- 13 Student
- 14 No answer

53-56 Full-Time Student or Division of Vocational Rehabilitation Training

- 1 Less than 2 months after surgery
- 2 Less than 4 months after surgery
- 3 Less than 6 months after surgery
- 4 Less than 8 months after surgery
- 5 Less than 10 months after surgery
- 6 Less than 12 months after surgery
- 7 Less than 18 months after surgery
- 8 Less than 24 months after surgery
- 9 Less than 30 months after surgery
- 10 Less than 36 months after surgery
- 11 Less than 40 months after surgery

57 Punch if change of jobs after surgery

58 Punch if patient not benefited from surgery

59 Punch if patient is undecided he was benefited from surgery

60

61-64 Complaints Related Still to Heart Disease

- 1 Shortness of breath - respiratory ailments
- 2 Arrhythmia - fibrillation - irregular heart beat - conscious of heart beat
- 3 Tires easily - short duration of energy - constant tiredness
- 4 None or did not answer
- 5 Pain (soreness or aches in chest, legs, arms or incision)
- 6 Retention of fluid
- 7 Just occasional chest pain

61-64 (continued)

- 8 Loss of memory, sight or hearing, loss of concentration
- 9 Restricted activity
- 10 Need more operation
- 11 Other (Dizziness, still have to take drugs, low sodium diet, leaky valve, anemia developed, perspire more, some weakness, adhesions, CVA problems, enlarged heart, lungs sensitive to any dust, blood prothrombin time taken, blood clots)
- 12 Some days just not up to par
- 13 Sound of aortic valve keeps me awake
- 14

64 All Deaths Punch +

65 Punch if death occurred 6 months or more after operation

66

67

68

69-72 How did the operation affect your nerves?

- 1 No change noticed
- 2 Only slight change
- 3 Nervous before operation and still nervous
- 4 Not before operation - more so now
- 5 After first six months to a year very nervous, but better now or at first quite badly, now only spells of nervousness
- 6 Crowds, children, pressures bother me now
- 7 Calmed down, improved
- 8 Greatly improved
- 9 Upset at the slightest thing
- 10 Spells of extreme nervousness
- 11 Very bad or worse
- 12 Not as nervous before operation
- 13 Nervous, depressed, confused
- 14 Quite nervous

73-76 How did the operation affect your outlook on life and personality?

- 1 No change noticed - none - the same as before - don't know
- 2 Slightly
- 3 Longer life expected
- 4 Look forward to things - new lease on life
- 5 Able to do more - more alive - enjoy life
- 6 Varying moods (depression - easily angered - quick temper - happier - forgetful - cry easily)

73-76 (continued)

- 7 Very good - brighter outlook - not a burden to anyone
- 8 Was fine until CVA or unemployment or retirement
- 9 Disappointed in condition - no better - bitterness - have to watch myself
- 10 Normal life now
- 11 Healthier - alive
- 12 More tolerant of others' troubles
- 13 People and situations occasionally bother me
- 14 After period of adjustment ok

77-80 Most Unpleasant Recollection

- 1 Hallucinations - bad dreams - confusion
- 2 Removal of drain tubes
- 3 Coughing
- 4 Pumping fluid out of lungs
- 5 None
- 6 Bird Respirator
- 7 Oxygen tent fears
- 8 Tracheotomy
- 9 Salt-free diet
- 10 Pain
- 11 Difficulty in breathing
- 12 Terrible thirst - fluids restricted
- 13 Unpleasant room mate - died or noisy or uncooperative with doctors
- 14 RN's took too long to get pain medication

81-84 Most Unpleasant Recollection (cont.)

- 1 Sleepless or long nights
- 2 Shots to ease pain
- 3 Test before surgery - angiogram - psychiatric evaluation - catheterization
- 4 Being alone - time passed slowly - bored
- 5 Loss of memory, hearing, sight - unable to express myself
- 6 Bandage, stitches - night sweats - drug reaction - removal needles
- 7 Recovery room unpleasantness
- 8 Other
- 9 Not seeing enough of family
- 10 Uncertain of what is to happen
- 11 CVA
- 12 Noise bothered me
- 13 Don't remember
- 14 Being transferred to ward

85-88 Most Pleasant Recollection

- 1 RN's and MD's - attitudes - interest - dedication - warmth - well treated by them
- 2 Assurance of successful surgery from MD
- 3 Visits from friends and relatives - other patients

85-88 (cont.)

- 4 When I awoke alive from surgery - found feet and hands
pink and warm
- 5 Able to return home - feel well
- 6 Good nursing care
- 7 Rapid improvement
- 8 Able to move about by self and clean self
- 9 Personnel attention
- 10 None or can't remember
- 11 All stay was pleasant
- 12 Medication pleasantness
- 13 Other
- 14

APPENDIX D
MASTER TABULATION

MASTER TABULATION

QUESTIONNAIRE

Total number of respondents answering each questionnaire item.

1. Date of last employment before surgery and type of work.

<u>235</u>	Responded
<u>28</u>	Did not respond

2. Date returned to work after surgery and type of work

<u>210</u>	Responded
<u>53</u>	Did not respond

3. Date returned to work full-time and type of work

<u>173</u>	Responded
<u>90</u>	Did not respond

4. If you have changed jobs state reason

<u>127</u>	Responded
<u>136</u>	Did not respond

5. Do you anticipate a change of work soon? If so, what kind?

<u>142</u>	Responded
<u>121</u>	Did not respond

6. If unable to work at the present time state reason

<u>142</u>	Responded
<u>120</u>	Did not respond

9. If not regularly employed, list an average day's activities

<u>166</u>	Responded
<u>89</u>	Did not respond

10. Additional comments

<u>201</u>	Responded
<u>63</u>	Did not respond

APPENDIX E
GENIAC NEEDLE PUNCH CARD

7 83	4 87	2 86	1 85	7 84	4 83	2 82	1 81	7 80	4 79	2 78	1 77	7 76	4 75	2 74	1 73
7 28	4 27	2 26	1 25	7 24	4 23	2 22	1 21	7 20	4 19	2 18	1 17	7 16	4 15	2 14	1 13
7 12	4 11	2 10	1 9	7 8	4 7	2 6	1 5	7 4	4 3	2 2	1 1				
Patient's Name															
Unit Number															
Operation Date and Type of Surgical Procedure															
<u>Occupation Prior to Surgery</u>															
1. Date quit work before operation															
2. Date returned to employment and type of work															
A. Part-time date															
B. Full-time date															
3. List change of occupations after returning to work															
Date of Adm.															
Date of Operation															
Date of Discharge															
Anesthesia Time															

GENIAC (R) FORM S-2

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TYPED BY
JANE MARNCHIANES

AN ABSTRACT OF THE THESIS OF

Beverly Jean Blachly


for the Master of Science in Nursing

Date of receiving this degree:

June 8, 1967

Title:

A Study of Vocational Status of Three
Hundred Twenty-nine Patients Before
and After Heart Surgery

Approved: 

Lucile Gregerson, Associate Professor in Charge
of Thesis

THE PROBLEM

The spectacular advances in cardiovascular surgery have diverted attention from the problems of vocational rehabilitation after heart surgery. Rehabilitation efforts are increasing in other hospital populations, but insufficient attention has been paid to patients who have chronic heart disease. It is of value to determine when cardiac surgical patients return to gainful employment and to identify the types of vocations this group pursues.

This study is concerned with the vocational adjustments of patients with surgically correctable cardiac disease before and after heart surgery.

The purpose of this study was to determine:

1. What time before surgery these patients quit work.
2. What time after surgery these patients returned to work.
3. What these patients do if they are not regularly employed.
4. What types of vocations these patients had before and after cardiac surgery.
5. If there was a relationship between age, sex and type of surgical procedure.

DESCRIPTION OF THE PROCEDURE

The primary sources of data were viewing 329 patients' hospital charts who had had heart surgery between January, 1959 and April, 1965 at the University of Oregon Medical School Hospital and a questionnaire mailed in December of 1965 to all members of the study who were thought to be alive six months after surgery. Telephone contacts were made to non-respondents in June, 1966 after a second questionnaire had been mailed.

The data collected were placed on Geniac Needle Punch cards after a

suitable code had been devised. The data were tabulated and analyzed in accord with the stated purposes of the study.

SUMMARY OF RESULTS

Significant relationships were found between the time the patient quit work pre-operatively and the time he returned to work post-operatively; between the patient who quit work more than six months pre-operatively to the time he returned to gainful employment; between age and sex in the various cardiac surgical procedures; and the types of vocations these patients followed before and after surgery.

CONCLUSIONS

From the findings of this study, the following conclusions may be drawn:

1. That if surgical cardiac patients had quit work more than six months before surgery, there is little likelihood that they would return to a gainful employment. If patients had not returned at the end of one year, they probably never would return to gainful employment.
2. That age is not a determining factor for returning patients to work for either the male or the female.
3. The number of serious problems that the cardiac patients present in terms of rehabilitation were not an impossible obstacle to gainful employment.
4. The findings substantiate the literature in the studies of Oates, et al.²⁴ and Goldberg and Spector¹³ in regard to rate of return to work of patients.

RECOMMENDATIONS FOR FURTHER STUDY

The recommendations for further study were:

1. An exploration study could be performed to discover what the lines of communication are between the patient and various agencies handling the vocational guidance of the heart patient.

2. A follow-up study of the patients who have completed training through the Division of Vocational Rehabilitation to see if the additional retraining was essential or contributed to gainful employment.