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ABSTRACT

Last in a series of three reports prepared to present the results of a project with the proposal title, An Integrated, Longitudinal Study of Practical Nursing, this report is based on data obtained through 45 cooperating practical nursing programs in Illinois and Iowa. Information was obtained from school records, through interviews with students and faculty, through three structured data collection sessions and by followup questionnaires. Practically all new graduates of the practical nursing preparatory program entered employment as LPN's in a wide range of assignments across all types of activities. Practical nurse education program capacity was generally inadequate to accommodate all applicants, and a question was raised regarding the validity of the licensure examination as an appropriate measure of nursing competency. It was found that a large number of applicants were in need of refresher and remedial educational services, and many needed financial assistance. Related documents, Part I and II of the series, are described briefly in this report, and are available as ED 040 299 and ED 040 300 respectively. (Author/GEB)

FINAL REPORT - PART III OF III
Project No. 5-0126
Contract No. OE-5-85-038

Background, Characteristics and Success of Practical Nursing Applicants, Students and Graduates

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COLLEGE OF EDUCATION
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
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SEPTEMBER 1971

In cooperation with
Program in Health Occupations Education
Division of Health Affairs
The University of Iowa
Iowa City, Iowa

U.S. Department of Health,
Education and Welfare
Office of Education
Bureau of Research

FINAL REPORT – PART III

Project No. 5-0126
Contract No. OE-5-85-038

(Proposal Title: An Integrated, Longitudinal Study of Practical Nursing)

BACKGROUND, CHARACTERISTICS AND SUCCESS OF PRACTICAL NURSING APPLICANTS, STUDENTS AND GRADUATES

Robert M. Tomlinson, Lois M. Langdon, John F. Huck and Lois A. Hindhede

September, 1971

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PREFACE

This report, Final Report - Part III, is the last of a series prepared to present the results of a project with the proposal title, An Integrated, Longitudinal Study of Practical Nursing. The project has been referred to in most reports and publications as the Practical Nursing Study. The prime contract was undertaken by the University of Illinois at Urbana-Champaign, College of Education; The University of Iowa, Division of Health Affairs, Program in Health Occupations Education was cooperatively involved through a sub-contractual arrangement. Funding was provided by the U.S. Office of Education, Bureau of Research, under provisions of the Vocational Education Act of 1963.

Background, Characteristics and Success of Practical Nursing Applicants, Students and Graduates, is based on data obtained through the 45 cooperating practical nursing programs in Illinois and Iowa. Information was obtained from the school records, through interviews with both faculty and students at the PN programs, through three structured data collection sessions at each school and by follow-up questionnaires. All applicants, enrolled students, dropouts and graduates were included in the Study. Chapter I provides a brief description of other reports prepared as a part of this Study, and Chapter VIII contains selected summary sections from those prior reports. Chapter VII contains the summary from each of three doctoral dissertations undertaken as more in-depth studies as extensions of the parent project.

Practical nursing has become a recognized and desirable occupation for women with a wide range of backgrounds and characteristics. A significant shift in the characteristics of the applicants has occurred in recent years. A large proportion, approximately one-third, of the applicants were married women entering the labor force for the first time or seeking advancement and more permanent employment in a satisfying occupation. However, approximately one-half of all students were young, single, recent high school graduates who had chosen to enter practical nursing preparation while still in high school. Almost one-half of all students had prior employment experiences as nurse aides prior to entering the PN program.

Practically all new graduates of the practical nursing preparatory program entered employment as LPNs, most on a full-time basis. They were employed in an ever-widening range of assignments across all types of nursing activities. Public resources invested in practical nursing education probably has a higher rate of return in terms of man-years of health services provided than investments in any other preparatory program for health personnel.

Practical nurse education program capacity was generally inadequate to accommodate all applicants. In some cases, this situation resulted in selection of only the higher ability students, many of whom could be successful in registered nursing programs; and, many persons who might have become quality LPN practitioners were denied the opportunity to obtain preparation. Results of the data analyses suggest that selection criteria at some schools may have been at a level higher than may be necessary, on the basis of evaluation by the professional nursing faculty members. The relatively low correlation between the grades given by faculty members as a result of evaluations of clinical performance and

the state licensure examination scores, and the comparatively higher correlation among the state licensure exam scores and other "verbal-cognitive" measures, raises a question of the validity of the licensure examination as an appropriate measure of nursing competency. The data suggest that there was a relatively large pool of applicants in need of refresher and remedial educational services who could with this assistance become successful graduates and practitioners. Others were in need of additional financial assistance to enter and maintain attendance at the preparatory program. Many were also in need of both types of assistance. Such persons are more often the married women with families who do not have the personal or family resources available to obtain occupational preparation. Proportionately more non-white women had such needs.

Although the data are somewhat out of date, due to delays resulting from mid-project budget reductions, the basic findings are sufficiently consistent with other known data and reports from the cooperating schools and employing institutions to be valid and meaningful.

ACKNOWLEDGEMENTS

In actual numbers, thousands of persons have given of their time and energies to carry out this Study. The employers, supervisors, employed LPNs, students, applicants, PN school faculty members, secretarial personnel at all locations and the many graduate students who served as staff members, all gave their full cooperation and support to the goals of the Study. Conducting interviews on the 11 to 7 shift and becoming snowbound in travel between testing sessions were a part of the unwritten reports. It is only through the abilities, interest and faith of many individuals and groups that the task was completed.

Recognition has been given in prior acknowledgements to persons most closely associated with each report. In addition to those persons listed as authors, Robert J. Martin, Jr. and Conard L. White performed preliminary analyses and interpretations for various sections of this report.

Warren N. Suzuki; Glen L. Martin and Larry J. Bailey held graduate research appointments while staff members of this Study. The additional findings by these investigators as supplemental studies add to the value of the total. One of the objectives stated in the original proposal was to provide educational and research experiences for extending the capabilities of personnel in vocational education and particularly for activities in the health occupation field. Over forty different graduate students have gained experience and assistance as a result of this Study. Ten have completed doctoral degrees and nine others are continuing toward that goal. All have made contributions to the health occupations education field as a result of their experiences.

The Project Director is especially appreciative of the continuing assistance, support, contributions, and energies given throughout this Study by Elizabeth E. Kerr, Associate Investigator, and Dale F. Petersen, Research Coordinator at The University of Iowa, Program in Health Occupations Education.

Gratitude and appreciation are due many who played vital roles. Blood, sweat and tears were mixed with many wonderful relationships and experiences; to each my thanks.

Robert M. Tomlinson
Project Director and Principal Investigator
September 1971

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CHAPTER I

INTRODUCTION AND BACKGROUND

This report Background, Characteristics and Success of Practical Nursing Applicants, Students and Graduates is the Final Report-Part III of a U.S.O.E. study entitled An Integrated, Longitudinal Study of Practical Nursing. This report is concerned with data and information obtained directly from the participating schools and the applicants, students and graduates of those schools. The total Study is conceived to be a comprehensive approach to establishing the dimensions of practical nursing education. Emergence of the practical nurse over relatively recent years has provided a new member of the health team as well as a new career opportunity for many.

Present practices and images are the result of earlier actions and events occasioned under a different set of circumstances. Future developments will be guided by impressions and judgements based, at best, on available data. The primary purpose of the Study is to develop a body of current data and trends to serve as a basis for sound judgements in planning future developments in practical nursing. This Study will not attempt to implement change, but will provide new knowledge and relationships in a meaningful manner. Adaptation and utilization of the data and findings for implementing change in practical nursing education programs, employment performance and recruitment will have to be the responsibility of competent leaders and administrators in the field.

The general hypothesis of this study is that there exist differential and identifiable characteristics among (1) potential and actual students, (2) approved programs of practical nursing, and (3) employment situations; and that meaningful relationships among these characteristics can be determined. Findings from all investigations of these characteristics and relationships should serve to improve the quality and quantity of available nursing service.

Appendix A presents an Outline of The Survey and Data Collection Plan which gives a general time schedule and description of instruments utilized in data collection for the entire Study.

In addition to the basic funding from the U. S. Office of Education, some supplementary studies were carried out under separate financing. In addition, three doctoral dissertations have been completed and are summarized in this report. At least three other dissertations based on data from this Study are in preparation.

Phases of the Complete Study

The complete Study involves three somewhat independent but closely related Phases. Each Phase was concerned with general objectives and a series of sub-objectives in establishing major characteristics, trends and relationships of that particular Phase to provide data and measures for utilization in comparative analysis with information obtained in the other Phases. The research design and procedure consisted of instrument development, pilot testing and staff training

sessions followed by concurrent data collection by research teams in Illinois and Iowa.

Foundation Phase

This was a study of all persons who had ever been issued a license to practice practical nursing in Illinois and Iowa with particular emphasis on those who had obtained their license following completion of an approved educational program.

Each State assumed independent responsibilities in carrying out the Foundation Phase as separate funding arrangements had been made. Basic data were obtained from the records of the Illinois Department of registration and Education and the Iowa Board of Nursing. Additional data were obtained through follow-up procedures to all persons who had an active license for the 1966 licensure year, were residents of the state at their last renewal and had been licensed on the basis of completing an approved practical nursing education program.

Results of these investigations are reported in the following documents:

Kerr, Elizabeth E. and Petersen, Dale F. Iowa Practical Nursing Sub-Study. Iowa City: University of Iowa, Program in Health Occupations Education, December 1966. Available from ERIC.

Kerr, Elizabeth E., Petersen, Dale F. and Czaja, F. Ronald. Practical Nursing in Iowa: A Profile. Iowa City: University of Iowa, Program in Health Occupations Education, 1968. Available from ERIC.

Tomlinson, Robert M., Ash, Clarence L., Langdon, Lois M. and Suzuki, Warren N. Practical Nursing in Illinois: A Profile. Urbana: University of Illinois, College of Education, July 1967. Available from ERIC, No. ED 013 645.

Although each of the reports is based on data separated by state, several findings and conclusions were common to both. They included the following:

There has been a rapid expansion in recent years in both the number of practical nursing programs and the number of students enrolled in the programs.

LPNs were employed in a wide variety of employment locations and in all nursing services.

Employment opportunities were available in all geographic locations with current and projected shortages more severe in rural areas than in metropolitan areas. All LPNs who desired employment were able to find a job.

There was a significant migration of persons both before and after training to Illinois while Iowa has a relatively stable migration pattern for LPNs.

The LPNs tended to become employed in the area where they received their training and had an exceptionally high employment rate. Over 70% of all persons with current licenses were employed full-time and an additional 9% were employed part-time.

Many of the LPNs licensed in 1966 were in the older age groups and reflected a significant number licensed by waiver. An increased number of newly prepared persons would be required in the near future.

In terms of the return on investment in practical nursing education, the LPNs as a group were returning a greater benefit in health care than an equal investment in most any other group.

Phase I: Currently Employed Practical Nurses

The LPNs in the 10% sample identified in the Foundation Phase and who met the criterion of license in good standing, completion of an approved practical nursing program and residence in Illinois or Iowa and further, were employed at least part-time provided a sample of employment locations. Interviews were then held with a sample of all LPNs employed at these locations. Sessions included obtaining information concerning prior occupational experiences, personal and social data, and information about their present assignment and the functions performed in that assignment. A modified Q-Sort was utilized to determine functions performed and the degree of responsibility assumed in performing the functions. Selected RNs who were the LPNs immediate supervisors and aides who worked on the same unit with the LPNs were also interviewed regarding functions and responsibilities assumed by the LPNs. The results of this Phase of the Study are reported in:

Tomlinson, Robert M., Bailey, Larry J., Hindhede, Lois A., and Langdon, Lois M. Occupational Patterns and Functions of Employed LPNs. Final Report-Part I of USOE Project #5-0126.

Copies of this report may be obtained from the College of Education, University of Illinois for $3.50 or from the ERIC Dissemination Center. ERIC can provide copies either in microfiche or hard cover.

Results of the Phase indicate that the LPN is employed in all types of institutions and is given all types of assignments. A major part of the Study focuses on the actual functions performed and the responsibilities assumed in performing the functions. In general the LPNs were performing a wide range of activities and with a greater degree of responsibility than had been reported by prior studies and than identified in the official statements of nursing association. Information from the interviews with the supervising RNs agreed with those functions and the degree of responsibility identified by the LPNs themselves.

Bases on these findings, it was suggested that re-evaluation of curriculum structure and emphasis in practical nursing education programs should be undertaken.

Phase II: Study of Practical Nursing Education Programs

This Phase of the Study was carried out with detailed interviews and

data collection sessions at each of the 45 participating programs in Illinois and Iowa. Three data collection on-site visits were made to each program. Follow-up activities were also necessary to obtain information on applicants who did not enroll, drop-outs and graduates.

Although the research methodology was conducted concurrently and jointly by the University of Illinois and University of Iowa staffs, the responsibility for analysis and reporting of results was divided between the two. Under a sub-contract the University of Iowa staff performed the analyses and reported on the program, faculty and curriculum aspects of the total Study. This information is available in:

Kerr, Elizabeth E., Petersen, Dale F., Hoadley, Carole B., Holloway, Lewis D., Davis, Donna J. An Analysis of Selected Educational Programs in Practical Nursing. Final Report, Part II. USOE Project #5-0126. April 1970.

Copies of this report may be obtained from the Program in Health Occupations, University of Iowa, Iowa City or from ERIC.

In summary, the above report provides information on practical nursing education programs in relation to student selection criteria and procedures, curriculum design and structure, relationships with affiliating clinical agencies and emphasis given in PN education to the various functions performed by the employed practical nurse.

On comparison of the data from the Q-Sort of participating program faculty and employed LPNs it was found that the faculty tended to be more conservative in their view of the roles, functions and responsibilities of the LPN. Particular discrepancies were noted in the area where the LPN might perform specialized or sophisticated functions or where the LPN might serve in an administrative-supervisory capacity. These discrepancies may be explained in part by the fact that many PN faculty members had a relatively short tenure.

The results of the second part of Phase II is in this Report; Final Report, Part III.

Since the results of the total Study are reported in a series of documents, it will be necessary for persons desiring results of all phases to review previous reports. Specific details of the research methodology, procedures, sample and findings will be found in the separate reports. The Final Report, Part IV, will summarize data from all prior reports. An Outline of Survey and Data Collection Plan is included as Appendix A of this report.

Research Procedure for This Report

The procedures and methodology used in the various Phases of the Study are described in the respective Reports. Several of the instruments used in the other Phases were also used in the Report. Appendix A gives the Outline of the Data Collection Plan for the total Study. Standardized instruments were supplemented with special devices, formats and coding systems developed and designed by the PNS staff.

All instruments developed by the PNS staff were given field trials which allowed for modifications and adjustments. Prior to actual use with the criterion class, a full pilot program using a practical nursing

program not participating in the Study was conducted. All researchers involved in the data collection process participated in the training sessions and pilot programs. Review sessions attended by all staff members followed each pilot session. At this time ambiguities and discrepancies in interpretation and directions were clarified. Written procedures were developed for each instrument. Standardized codes and definitions were used to reduce data to a form that could be processed by computer.

Population and Sample

The population for this Study was selected from those practical nursing programs in Illinois and Iowa which had graduated at least one class before September 1966. In Iowa 22 programs admitted students in the fall of 1966, of these 16 met the criteria. At the same time, there were 31 programs in Illinois; all of which met the requirements for participation. These 47 programs provided the sample for the entire Study of the Study and were invited to participate. Forty-five of the 47 programs accepted; all 16 of the Iowa programs and 29 of the 31 Illinois programs. These 45 programs provided the sample for the entire Study. Because some of these programs admitted more than one class per year, it was decided that only one class admitted during the 1966-67 school year would be included in the Study. "Practical nursing programs" and "participating programs" as used in this Report, refers to an organized program which is approved by the appropriate licensure agency for preparing persons to take the state practical nursing licensure examination and which qualifies them to become a licensed practical nurse, LPN.

The participating programs were operated under several types of administration. The type of administrative control was thought to be of possible importance in: the selection of applicants, numbers of students admitted, student motivation, financial need, number of drop-outs and graduates as well as faculty, program and curricula organization. Thirty-nine of the 45 programs were under public administrative units, such as a local secondary board of education, area vocational school board, junior college board, university board of trustees and county hospital board of trustees. The six other programs were administered by private non-profit hospitals. All programs under a public administrative unit were funded at least in part by federal and/or state funds.

Selected data analysis of the programs would be in reference to the type of administrative control. Classification, however, involved some difficulties in making distinctions. Ultimately, six categories were established. Four of the secondary school boards in Iowa operated area vocational schools. Participating programs in these four schools were grouped with a program in a technical institute operated by a university in Illinois. These five programs comprised the area vocational school category. Fourteen programs in Illinois and two in Iowa were operated as independent programs under the administration of local secondary school boards. In addition, nine secondary boards of education in Illinois administered programs funded through provisions of the Manpower Development and Training Act. These programs are reported as a separate category since selection procedures, financial support and program continuity due to funding, establishes special circumstances. Six junior or community colleges in Iowa and one in Illinois administered programs as

a part of their total educational program. One program operated by a university in Iowa was grouped with the junior college programs since characteristics and other features indicated a high degree of compatibility. The six programs operated by private hospitals were grouped into one category. Table 1.1 shows the types and numbers of programs by state and total.

TABLE 1.1: TYPE OF ADMINISTRATIVE CONTROL OF PN PROGRAM BY STATE AND TOTAL

	ILLINOIS	IOWA	
EMPLOYMENT STATUS	N	N	TOTAL
Area Vocational School	1	4	5
Local High School Board	14	2	16
MDTA	9	0	9
Junior College	1	7	8
Hospital	3	3	6
Other	1	0	1
TOTAL	29	16	45

In addition to the programs which were funded as an independent entity under the MDTA provisions, a number of students in other programs in both Illinois and Iowa were supported under provisions of the Act. At the time of the Study there was a rapid development of area schools and junior colleges in the two States. In some cases the administrative control of the program was shifted to a junior college base during the course of the Study or for the class following the criterion class.

Criterion Class

For purposes of this study, one class at each of the 45 participating programs was indentified as the criterion class for data collection and analysis purposes. The criterion class was designated as the first class admitted to the program in the fall or winter of 1966. Thirty-five of the criterion classes started by the end of September 1966. The remaining ten classes started between the end of September 1966 and January 1967.

The 45 criterion classes, one from each program, comprised the student sample for the Study. There was a total of 1350 students in the class and they represented 54.7% of the total enrollment of the participating programs for the 1966-67 school year. The number of students in criterion classes ranged from 13 to 70. The median class size of the 16 Iowa classes was 29; and of the 29 Illinois classes, 27. Although Iowa's median class size was larger, 31% of the Iowa programs enrolled

20 or fewer students. Only 17% of the Illinois classes were of this size. Well over two-thirds of the programs in each state enrolled 35 or fewer students. Table 1.2 shows the size of criterion class by state and public or private control.

TABLE 1.2: SIZE OF CRITERION CLASS BY STATE

	Illinois				Iowa				Combined	
	Private		Public		Private		Public			
Class Size	N	%	N	%	N	%	N	%	N	%
15 or fewer			1	3.9					1	2.2
16 - 20	1	33.3	3	11.5			5	38.5	9	20.0
21 - 25	1	33.3	7	26.9	1	33.3	1	7.7	10	22.2
26 - 30	1	33.3	6	23.1			2	15.4	9	20.0
31 - 35			3	11.5	1	33.3	1	7.7	5	11.1
36 - 45			2	7.7	1	33.3	3	23.1	6	13.3
46 - 50			2	7.7					2	4.4
51 - 55			1	3.9					1	2.2
61			1	3.9					1	2.2
70							1	7.7	1*	2.2
TOTALS	3	99.9	26	100.1	3	99.9	13	100.1	45	99.8

*Although 73 were enrolled in this program, three enrollees chose not to participate in this study and are not included in the data analysis.

TABLE 1.3: TOTAL STUDENT ENROLLMENT IN ALL PN PROGRAMS DURING 1966-67 SCHOOL YEAR

	Illinois		Iowa		Combined	
Total Enrollment	N	%	N	%	N	%
20 or less	4	13.8	5	31.3	9	20.0
21 - 35	6	20.7	4	25.0	10	22.2
36 - 50	9	31.0	4	25.0	13	28.9
51 - 75	5	17.2	2	12.5	7	15.6
76 - 100	1	3.5	1	6.3	2	4.4
102	1	3.5			1	2.2
104	1	3.5			1	2.2
281	1	3.5			1	2.2
425	1	3.5			1	2.2
TOTALS	29	100.2	16	100.1	45	99.9

Among the 45 programs, a total of 2,468 students were enrolled in all 75 classes. One program in Illinois admitted 425 students in six classes, and three programs had a total enrollment of over 100 each. Over 34% of the Illinois programs enrolled more than 50 students each. Over 81% of the Iowa programs each enrolled 50 or fewer students; more than 31% enrolled 20 or fewer. One school also operated a class for part-time students which required about two school years for completion.

Data Collection Schedule

During the 1966-67 school year, three data collection sessions were scheduled at each of the 45 participating programs. Prior arrangements had been made with each program so that student selection and application information could be obtained in a common fashion by all participating schools. Additionally, follow-up questionnaires were utilized for applicants who did not enroll, drop-outs, and graduates after completion of the program.

During each data collection visit to the participating programs, two types of activities were conducted. One team of the Project staff administered various instruments and devices to the students assembled in one group. The other Project staff members conducted interviews with the coordinator of the program and individual faculty members and administered instruments to the total faculty.

Data collection by the participating programs began in January of 1966 and continued through January of 1967. The programs obtained similar personal information and most programs used ability tests to assist in the selection process. The participating programs were free to use whatever standardized tests or selection procedure that best served their purpose; however, the Pre-Admission and Classification Examination (PACE) and the Otis Gamma Form EM Quick Scoring Test of Mental Ability were used by all the schools at the request of the PNS staff.

Each school used its own application form. Most of the forms were quite similar. In addition, it was almost a universal practice to ask each student for personal references and to interview each applicant before admission. In addition, most schools required high school transcripts or evidence that the high school diploma had been awarded. In Illinois, the GED exam showing equivalency to the 10th grade was acceptable. Personal and employment references plus the physical exam and other information were a part of each student's file. Test results, including the GATB for all MDTA students and many others, were available and were obtained by the project staff.

First Data Collection Visit

The first visit was made to each program during the first two months the students were enrolled. Most visits were conducted between the 3rd and 5th weeks. At the first data collection visit the research team met with all students in a group session. At this time each student was asked to give written permission for participation in the Study and the purposes and procedures of the entire Study were explained to them. Following this, tests as listed in Appendix A were administered. In each case, the leader of the research team went through each of the instruments item-by-item with the group. All questions on an item were explained when they occurred.

Following the group data collection session, members of the research team then obtained relevant data directly from the file of each student. In all cases there was a high level of cooperation from both the student and the staff. The testing situation was deemed adequate for research purposes.

Since a number of students had applied to more than one program, it was necessary to coordinate data from all programs. All multiple applicants were identified and counted once during the Study.

Second Data Collection Visit

This session was scheduled during or as close to the fourth month of each program as possible. This period coincided with the more common transition where the balance of time was shifted from primarily classroom to clinical experiences. Again, all data collection sessions were conducted by PNS staff; the students were in a single group. The second data collection session was somewhat longer than the first, usually required approximately three and one-half hours. A break was scheduled during the session. The Resident Student Blank, Minnesota Vocational Interest Inventory, and the Vocational Development Inventory were administered at this time. In addition, the students were asked to complete a second information form prepared by the PNS staff.

Evaluation data prepared by or obtained from the faculty were collected for each student and the class as a whole. Student Evaluation Form I, was developed by the project staff to obtain an early instructor evaluation on each student's classroom achievement, clinical performance, and patient relationships. It was intended that the evaluation should be obtained after the instructor had had 40 hours of clinical contact with the student. This same instrument was also completed by the faculty on the third visit to ascertain whether changes had occurred over a period of time. These evaluations could then be compared to other data and test scores.

At selected Illinois schools students were also asked to respond to an attitudinal questionnaire developed by Dr. Warren Suzuki, a PNS staff member. This instrument was a follow-up t a similar instrument administered in the First Visit. (For a summary of the findings of his study, see table of contents for page reference.)

The Three Units of Content test, developed by the National League for Nursing, was provided to each of the cooperating programs. This test was developed to be used as an achievement measure at about the fourth month of traditionally scheduled PN programs. Since a number of the programs in this Study were utilizing an integrated curriculum approach, this test was not appropriate at the fourth month and was delayed at the discretion of the faculty. The tests were provided directly to the participating programs; the results were reported to the Project office. In some cases this test was not given until near the end of the program.

Following the second visit, the individual test scores from the Dailey Vocational Test Battery were distributed to the respective coordinators. The preliminary interpretations of the scores were based upon data collected from 300 practical nursing students enrolled in Iowa schools and were developed from the unpublished doctoral dissertation by Frank E. Malone, Jr. Many of the same instruments used in his study were also used in this Study.

Again, a split-team approach was used at the second session. One group worked with the students while another obtained data concerning the program and faculty from the coordinator and faculty members.

Third Data Collection Visit

The third visit was scheduled at each of the programs approximately one month prior to graduation. Since a number of programs permitted the students to work essentially full-time as a review or as a special experience activity, it was necessary to schedule the visits while all students were in common class sessions. The third data collection ses-

sion required approximately one and one-half hours. An instrument dedevoped by the project staff to obtain information concerning the students satisfactions with the PN program and employment expectancies was administered. Additional instruments were also administered to the faculty and coordinator concerning their perceptions of the PN program and their own plans for future activities.

The Nursing Including Pharmacology (NIP) achievement test developed by the National League for Nursing was administered by the school faculty at the end of the program. This test has been designed to be a final achievement test and found to have a high positive correlation with the state board licensure examination. Results of this test were also provided to the Study.

Address and name changes were also obtained to facilitate follow-up activities. Student evaluation data from the records and the faculty members concerning individuals and the total class were also obtained. Where final grades were not available, the forms and use of the forms were explained to the faculty to be completed and mailed to the Project office when all information was complete.

Follow-up of Applicants, Drop-outs, and Graduates

Each of these groups were followed-up with a mail questionnaire. All persons determined to be an applicant for the criterion class but who had not actually enrolled in that class were mailed questionnaires approximately two months after the class started. This questionnaire requested information concerning their current employment activities, reasons for not entering the program and plans for the future.

Data concerning those persons who had entered, attended at least one day but did not complete the program with the criterion class were followed-up with a mail questionnaire. Information requested by this questionnaire included reasons for dropping out, present employment situation and plans for the future. At the time a student discontinued classes, the coordinator of the respective program forwarded a form concerning the drop-out giving the reasons for discontinuing to the Project office.

A mail questionnaire was sent to all graduates of the criterion classes approximately two months after the graduation date of that class. Again, information was requested concerning their current employment, employment plans, income, nursing assignment and duties, and satisfaction with the PN program they had completed. The state board examination scores were forwarded directly from the licensure agency or via the program to the Study office.

Definitions

Several terms that may have special connotations are used throughout this report; therefore, definitions are provided.

Applicant

It was initially thought that a simple definition of an applicant would suffice. However, there was a great deal of difficulty determining just when a person became an applicant to a particular program or class. Some programs have as many as eleven separate steps in their admission procedure. Four steps may have been completed before the student

was given the actual application blank. Also, since applications were accepted on a continuing basis and some programs had multiple classes per year, it was difficult to identify applicants with a specific class. Consequently, the applicants were classified as being in one of three stages; preliminary stage, intermediate stage, and completed application. In this Report applicant will refer to a person who has completed some step in the application sequence unless noted otherwise.

Student or Enrollee

In this Study, persons are considered to be students when they have completed all application procedures, been given permission for admission by the program and attended one day of class. This definition of student tends to inflate the number of drop-outs; students in MDTA sponsored programs were more likely to drop-out with only a few days of attendance.

Drop-out

All students who had attended at least one day of class but who did not complete the program on schedule with the criterion class are defined as a drop-out for purposes of this Study. This definition also tends to increase the number and percentage of drop-outs. In those programs having multiple classes per year, it was not unusual for a student to be permitted to drop back to the next class when difficulty was experienced in any one phase of the program. Also, some students were given a leave from a criterion class due to health or family reasons and allowed to re-enter a later class with full standing. All were designated as drop-outs of the criterion class.

Graduate

Those students who completed the proscribed course of instruction and received the recommendation of the faculty to take the licensure examination are considered graduates. They must have remained on schedule with the criterion class. All graduates with one exception actually attempted the licensure examination in the reference States or in another state.

Criterion Class

One class for each 45 participating PN programs which was the first class admitted after August 15, 1966, is considered a criterion class. Most classes entered during September and October but some started as late as January 1967.

Practical Nursing Program or School

An educational unit which provides a course of study in practical nursing approved by the appropriate licensure agency in each State. In this report the primary concern is with those 45 units participating in the Study. The terms program and school may be used interchangeably.

CHAPTER II

APPLICANTS WHO DID NOT ENROLL

One purpose of the PNS Study was to ascertain the characteristics of that pool of persons who applied to but did not enroll in a practical nursing program. All occupations attract a number of individuals who desire to enter but for some reason do not enroll or complete the prerequisites necessary to gain entrance to the field. Non-enrollment may result from either self-initiated activities or the action of others.

Since completion of a formal educational program is necessary to obtain a license for practical nursing, legal requirements influence policies and procedures of the preparatory educational program. Within these basic legal requirements, individual programs may establish higher standards, and in fact many do.

This Chapter deals specifically with those persons who took some positive action to gain entrance into a PN criterion class, but for some reason did not enroll or attend class for at least one day. Indications of the potential pool of future students and those factors which might make it possible for greater numbers of the pool to enter practical nursing were sought.

Methodology

Early contact was made with each participating program indicating the Project's desire to obtain information concerning all applicants to the criterion class. The programs agreed to follow their established procedure but to make particular attempts to record that information identified by the PNS staff as important to the Study.

The programs started data collection in January 1966. Final Report, Part II reviews the student selection procedures and the basic requirements established by the participating programs. There was a great variety in the selection procedures and the number of steps in the procedure followed by each of the 45 programs.

Legal requirements in each of the two States were influencing factors. In Iowa, all students were required to be high school graduates or provide high school diploma equivalency. In Illinois, the students had to have completed the 10th grade or show equivalency. Students in each State were required to be at least 18 years of age at the time they made application for licensure.

Most of the programs established other criteria, such as, a maximum entrance age of 55 years. Three programs had provisions which limited enrollment to females.

Some programs under the administrative control of a larger administrative school unit used the central guidance and testing service available to all educational programs as part of the selection procedure for applicants.

Most of the programs had a file of current applicants. Included in the file were those persons who were in some stage of the application. In Iowa, there seemed to be a trend for high school seniors

to make application to PN programs in the same pattern as students applying to other post-high school institutions. Consequently, Iowa PN class quotas were filled earlier than in Illinois.

The procedure of many programs allowed applications to be made at any time during the year. The most common practice was for applications to be initiated in the early spring, particularly in those programs which had one class per year commencing in the fall. One program selected all applicants for their two classes at the same time. There was a continuous flow of applicants to those schools which admitted several classes per year. In these situations the PNS staff concerned themselves with collecting data on those applicants who started or reactivated the application procedure within the 90 day period prior to the starting of the criterion class.

To obtain the broadest possible base, all persons in any stage of the application sequence were included; therefore, results reported show a high percentage of unknown data, particularly in relation to applicants in the preliminary stage of application.

To provide consistency, the application sequences were classified into two and usually three stages: (1) preliminary stage, a positive action by the applicant which may have been the filling of forms or participating in preliminary screening; (2) secondary stage, action beyond the preliminary stage usually the taking of further tests and/or interviews; (3) completion stage, final testing interview or filing of all records required for admission.

Of the 1796 applicants who did not enroll, 10.9% could not be classified in a stage, 27.6% were in the preliminary stage, 24.7% had completed the secondary stage and 36.8% had completed the procedure.

Table 2.1 shows the number of applicants, drop-outs and graduates by type of program and state. The number of applicants shown by this Table is an underestimate of the total number of persons who might have expressed interest in entering the criterion class. The nine MDTA contract programs in Illinois reported proportionately fewer applicants as the State Employment Service conducted the screening and preliminary procedures for applicants to these programs. In many cases the only data available came from these applicants after they were admitted to MDTA programs. Typically, admission to these programs was on the basis of meeting the requirements established by the Employment Service. In some cases, persons who had minimal qualification were admitted in order to complete the class.

Some persons were sponsored under provisions of the MDTA in non-MDTA programs. In such cases, they were screened and referred to the non-MDTA programs by the Employment Service. The program then selected those referred who also met their requirements. This later procedure was used by programs in both Illinois and Iowa. Iowa had no MDTA contract programs.

The PACE test and the Otis test were sent by the PNS staff to each participating program early in 1966. Most of the programs administered these two tests as a part of their admission sequence. The Employment Service administered the GATB test to applicants to MDTA contracted program students as a part of their selection procedure. They did not administer the PACE and Otis test; therefore, these tests were administered to MDTA program students after the start of the

TABLE 2.1: NUMBER OF APPLICANTS, DROP-OUTS & GRADUATES BY TYPE OF SCHOOL

	APPLICANTS			ENROLLED		
TYPE OF SCHOOL	Ill.	Iowa	Total	D.O.	Grad	Total
Local HS Board	837	151	988	106	398	504
Area Voc. Sch.	30	160	190	16	143	159
MDTA	117	---	117	103	194	297
Jr. College	52	189	241	20	159	179
Hospital	73	133	206	29	139	168
Other	54	---	54	20	23	43
TOTALS	1163	634	1796	294	1056	1350

criterion class.

In the first on-site school visit, the PNS staff obtained data on applicants from the school records. At this time names and addresses were also obtained for the follow-up questionnaire mailing. Interviews were held with faculty members of each program to aid in identifying the reasons why applicants did not enroll. In some cases furthur data collection activities were necessary and took place in subsequent on-site visits and/or through correspondence with individual programs.

A mailed questionnaire was the second major applicant data collection activity. The first questionnaire was sent in May, 1967. In July and September, follow-up mailings were sent to those who had not responded. The criterion class to which the applicants had applied had been in session from four to nine months; the majority of the questionnaires would have been received approximately eight months after their class had started.

Characteristics of Applicants

Since many of the application forms contained limited information, it was not possible to make as many comparisons for the total group as was desired. The school records provided addresses for 1720 applicants. The first questionnaire was mailed to these; 130 were not deliverable by the post office. There were 1238 of which 1035 were sufficiently complete to be useable. By states, Iowa had a 69.5% response rate, while Illinois had a 55.1%. Some of the following analyses involve data from the school records and the follow-up questionnaire as were available.

Sex, Age and Marital Status

The great majority of applicants were female; only 62 of the 1796

applicants were male.

Age, marital status and number of dependants were known for 347 applicants in the preliminary stage, 444 in the secondary and 661 in the completion stage of the admission sequence. Table B.1 gives more detailed information about these characteristics.

Of the total applicants in all three stages of the application sequence, 34% were in the 18-19 age group, but their percentage increased in the next two stages. In the completion stage 57% of the applicants were 24 years or younger. Somewhat over 21% of the applicants in the secondary and completion stage were in the 21-24 age group.

Marital status was known from the program files for 82.5% of the applicants; 45.2% were single, 31.9% were married, 1.8% widowed and 6.3% separated or divorced. Only 37% of the applicants in the preliminary stage were single, while 57% in both the secondary and completion stages were single. 71% of the married applicants in the preliminary stage had no dependents while 50% of those married applicants completing the sequence had no dependents.

Table B.2 gives the number of dependents and number of children of all applicants by type of program and State. Dependent was defined as a person dependent upon the applicant for financial support; this might include a member of the immediate family or some other person. Some single applicants had dependents. 79% of all applicants had no dependents even though they may have had children in the home; 11.6% had one or two dependents, 6.4% had three or four and 3.1% had five or more. Only 6.7% of the Iowa applicants had dependents; 30.7% of the Illinois applicants had one or more dependents, and of these, 13.9% had three or more.

71.6% of all applicants had no children in the home. Of those who did, 16% had one or two and 12.2% had three or more. 15.4% had one or more children under six years of age; 14.8% had children in the home between six and twelve years of age. There is an overlap in the last two percentages as some applicants had children in both age groups.

Since approximately 21% of all applicants had dependents, they may be more likely to pursue practical nursing education because of economic demands.

In Illinois, a higher percentage of applicants had dependents and each tended to have a larger number of dependents, particularly in the local high school board and MDTA programs.

Iowa applicants included a significantly higher proportion of applicants at all stages of the application sequence who were younger and single. The difference is particularly great in the 24 and younger group.

Approximately 10% of the applicants in all three stages of the sequence were heads of household; widowed, divorced or separated. In the preliminary stage, the head of household applicants in the 21-24 age group were more likely to have dependents; generally three or four. In the secondary stage they were more likely to be in the 21-29 age group and have one or two dependents. In the completion stage, the percentage of head of household applicants was somewhat equally represented in all age groups and the number of dependents was most likely to be one or two. 80% of head of household applicants applying to hospital programs had no children while 67% applying to junior college programs had none. Of the applicants applying to local high school board programs, 38% had no children; of those applying to MDTA programs, 33% had none.

Over one-third of the head of household applicants had no dependents in the preliminary stage, this percentage fell to 26.5% in the completion stage. This may suggest that there is a greater need for the head of household applicant with dependents to persist in the application procedure for economic reasons and for those with more dependents to withdraw before completion of the application for the same reason.

Race

Race of the applicant was indicated on 1078 applications in the school files. Of these applicants, 81.8% were non-white. The percentage of non-white applicants is probably an under-estimate since the MDTA programs tend to have a high percentage of non-white students but little information was available on the MDTA program applicants.

Of those applicants whose race was known, local high school board programs had 36% non-white applicants, area vocational school programs had 8%, MDTA had 18%, junior college 6% and hospital schools had 2%.

By comparison, 10.3% of all students enrolled in criterion classes were non-white and they graduated 7.3% non-whites; 21% of the dropouts were non-white. In Illinois in 1963 to 1965, 26.5% of all practical nurses with current licenses were non-white. Migration to Illinois from southern states accounted for a significant number of those non-whites licensed in those years.

Responses to the Follow-up Questionnaire

Findings in the proceding section were based primarily on the data of record from the program files. Sections which follow are based on responses to the follow-up questionnaire or on those cases where data were available from both the records and the questionnaire.

A higher percentage of head of household groups returned their questionnaires. Also, a higher response rate was obtained from Iowa and the results are more reflective of their younger, high school graduate and single population. The 22 programs which admitted one class per year, including 15 of the 16 programs in Iowa, had a response rate of 68%. Those with two classes per year had a response rate of 50.5%, and those with three or more classes responded at a 46.6% rate. Some applicants who were not admitted to the criterion class had entered a later class at those programs which offered two or more classes per year. However, these cases account for only a small part of the difference in response rates. Since it may be assumed that those most interested in enrolling in a school were also most likely to return the questionnaire, the data may be reflective of those with a stronger desire to enter.

Marital status by States on the follow-up showed Illinois with 30% single, 51% married, and 19% as head of household group; Iowa had 41%, 45%, and 14% respectively.

The respondents to the questionnaire had a relatively higher level of family responsibilities than the data of record from the programs.

50% had no children, 31% had one or two children, 17% had three or four children, and 8% had five or more. The number of children and the number of applicants with children were higher by the follow-up group than for the applicants as a total group from program records. By States, two-thirds of those in Iowa had no children, while almost the same percentage of the Illinois applicants had one or more children. Proportionately the applicants in Illinois had larger families.

By type of school, the applicants to the hospital schools who responded were single in 77% of the cases, while area vocational school and junior college respondents had approximately 51% in this category, the local high school board programs had 28% and MDTA 20%. 22% of those in the MDTA program and 19% of those in the area vocational program were in the head of household category. 62% of those applying to local high school board and 67% of those at MDTA programs had dependents. 40% of the area vocational, 36% of the junior college and 27% of the hospital applicants had dependents. Response rate by type of school and status of application is shown in Table B.4.

School Achievement

High school records and transcripts in the program files were reviewed. These were more likely to be available for those applicants in later stages of completing their application. Analyses by stage of application, high school achievement and type of PN program revealed that many persons make application without adequate educational background and are usually screened out at the first or second stage of the admission sequence. Highest grade completed was known for 1470 of the 1796 applicants. 76.3% had attained twelfth grade education or above, 5.6% eleventh grade, 9.8% tenth grade and 6.6% ninth grade or less. Those in the last category did not meet the minimum requirements in either Illinois or Iowa. There were 41 applicants who had completed the application sequence with less than ninth grade education but most of these had demonstrated tenth grade or high school diploma equivalency.

Applicants to programs operated by local high school boards were far more likely to have less than twelfth grade education in all stages of the sequence. This reflects the discrepancy between admission requirements of the two states; Iowa requires twelfth grade achievement or high school diploma equivalency while Illinois requires tenth grade achievement or equivalency. Of all applicants at the preliminary stage, 33.8% had tenth grade education or less and only 15.2% of those who had completed the sequence were in this group.

High school achievement as determined by grade point average and rank in class were available for only 748 and 546 applicants, respectively. There was some evidence that there was a higher percentage of applicants with an A grade point average or applicants ranked in the top 25% of their graduating class in the preliminary stage of the sequence than in the second or completion stages. Slightly over half of those in the secondary and completion stage had an approximate C grade point average.

7.5% of the secondary stage applicants and 7.7% of those who had completed the sequence ranked in the top quarter of their graduating class. For those ranked in the upper 50% of their class there were approximately 27% in the second stage and 31% in the completed stage.

There were 41.1% in the secondary stage and 37.5% in the completed stage who were in the bottom quarter of their class. These data can be contrasted with approximately 48% in the top half of their class in the preliminary stage of the application sequence. These data would indicate that a number of those students with high level achievement in high school change their educational plans and enter other educational programs. Other analyses indicate that approximately 33% of the 132 students who were accepted but withdrew prior to entry were in this highest ability category.

School Achievement Reported by Applicants

Of the 1035 questionnaire respondents, 79.6% reported they had completed high school. In Iowa, 89.1% reported high school graduation and in Illinois 56.3%. Respondents who had applied to area vocational, junior college and hospital programs reported 84%, 81% and 89% high school completion, respectively.

Somewhat less than one-half of the respondents reported their grade point averages and rank in class. They generally reported both or neither. The high school graduate was most likely to give an estimate of these measures. In both states, slightly less than one-half reported an average in the C range. Approximately one-third of the applicants reported that they were in each of the third and fourth quarters of their classes. The remaining one-third of the students reported estimates that they were in the top or second quarter of their class. The distribution of their estimates across type of school were relatively consistent. No noticeable difference in proportion of students in any one type of school appeared more likely to be in the top quarter of their class or to have an A or B grade point average.

Ability Measures

Table B.4 presents the means, standard deviations and intercorrelations (Pearson) for the OTIS, PACE, GATB, high school grade point (on a four point scale) and high school rank in class (by quarters). This mean score was significantly lower than that for either the graduates or dropouts. The mean high school grade point average was 2.9 which was also lower than the graduates or dropouts.

Approximately one-third of the applicants had reached the stage in the selection process to have taken either the OTIS or the PACE. Data were available for approximately 100 cases for the GATB test. The standard deviations of the applicants were consistently greater on all measures than for enrolled students. A correlation of .69 existed between the verbal measure of the PACE and the verbal measure of the GATB. A slightly lower correlation, .65 was found between the OTIS and the two verbal sub-tests.

The greater dispersion and low mean scores for the applicants are not surprising. Included in the applicant group were a number of higher ability persons in the preliminary stage who did not continue through the application process. Also, a number of persons applied who did not meet the minimum educational background or who scored lower in ability than normally would be accepted. Comparisons of these measures for the applicants with the enrolled students will be made in a later section of this Report.

Persons Influencing Applicants to Apply

One part of the follow-up questionnaire was devoted to determining the source of information or influence which caused a person to make application to a PN program. In part, this approach was used to ascertain the amount of influence of various reference groups and the persons who may provide recruitment information for practical nursing programs. See Table B.5.

Of the total respondents 86.7% stated that some other person had influenced their action or decision to make application. A total of 52.7% cited another person in the nursing field. More specifically, 16.4% cited a LPN graduate of the school to which they applied, 15.4% cited another practical nurse, 16.4% cited an RN, and 4.5% cited a nurse aide. High school counselors were cited by 13.6% of the total group. 18.4% of the applicants to area vocational school programs, 21% of those to junior colleges, and 18.3% of applicants to hospital schools cited high school counselors.

12% cited a relative or other family member while another 15% cited a co-worker or friend. 4.7% of all applicants cited the state employment service counselor; as might be expected, the employment service counselor was cited by 18.8% of all MDTA applicants.

In a further attempt to determine the information sources used by applicants, an item was included in the questionnaire to determine how they had first learned of the PN program to which they applied. 996 persons responded to this item. 79% indicated their first information had been from another person, as cited above. 19% had obtained the information from a newspaper and the remainder from the radio or TV. Mass media had been relatively more influential in Illinois than in Iowa, 27% to 13% of all respondents respectively.

Reasons for Non-Entry

Data upon which this section is based were obtained from both the school records and by follow-up. Persons who had applied to area vocactional schools, junior colleges, and hospital schools had a response rate of approximately 70%. Those who had applied to a local high school board program or a MDTA program had a response rate of approximately 50%. Table B.3 shows the response rate to the questionnaire by status of application and type of school. Those persons with an unknown status had a response rate of 68%. Persons at the three stages of application responded at : 44% for preliminary, 68% for secondary and 58% for completed.

Tabulations of reasons for non-entry obtained from the school records are shown in Table 2.2. Some data were available from the school records for 1779 applicants. 585 applicants initiated action on their own to not enroll in the criterion class. 453 persons withdrew their application while it was in process. 75.5% for a wide variety of general reasons. A majority withdrew after some testing and/or interviews. 4.4% gave financial reasons while 7.7% asked that their application be delayed until a later class. An additional 132 persons were given an acceptance to enter the criterion class but them withdrew. 34.8% of the 132 entered another educational program while 38.6% gave general and personal reasons. 6% indicated family responsibility and an equal number

TABLE 2.2: REASONS FOR NON-ENTRY: FROM SCHOOL RECORDS

REASON	ACTION BY APPLICANT: Application Withdrawn N	%	Accepted Then Withdrawn N	%
Other Education	---	--	46	34.8
General & Other	342	75.5	51	38.6
Marriage	11	2.4	1	0.8
Illness of Self	9	2.0	4	3.0
Pregnancy	4	0.9	3	2.3
Family Responsiblity	18	4.0	8	6.1
Spouse-Job Change	3	0.7	3	2.3
Transportation	3	0.7	5	3.8
Financial	20	4.4	8	6.1
Change of Objectives	8	2.7	3	2.3
Applicant Request to Delay	35	7.7	---	---
Total	453	100.0	132	100.0
	453	25.5	132	7.4

REASON	ACTION BY SCHOOL: N	%
Pending	294	24.6
Rejection	(686)	
Inadequate Facilities	71	5.9
Testing	583	48.8
Inadequate Education	32	2.7
Personal Characteristics	(169)	
Personal	57	4.8
Physical	76	6.4
General	36	3.0
Unknown	45	3.8
	1194	100.0
	1194	67.1

Note: In addition the Employment Services rejected 12, six on the basis of testing. Five others were accepted but did not enroll

		N	%
TOTALS:	Action by Applicant	585	32.9
	Action by School	1194	67.1
	GRAND TOTAL	1779	100.0

indicated financial problems.

In the "action by the school" category, there were 1194 applicants including 294 still pending. 583 of these applicants, 48.8%, had been rejected on the basis of test results. An additional 2.7% were rejected due to personal characteristics. Observations and discussions at the PN programs resulted in the impression that the number rejected due to "test results" included a number of students actually rejected due to personal or other characteristics. Citing test results as a basis for rejection was often used as a means to avoid potentially unpleasant or questionable basis for rejection by the PN staff.

1035 applicants responded to the follow-up questionnaire where relatively complete data concerning the same person was also available from the school records. This permitted a comparison of the reasons for non-entry as given by the school records and those given by the applicants through the follow-up procedure. The questionnaire was structured in a fashion which asked the respondent to give their reasons in priority order for each of two questions. One question was structured to obtain responses concerning personal or family reasons for non-entry; and, the other was structured to obtain information concerned with the qualifications of the applicants and their future objectives for education or employment.

Use of this approach permitted the opportunity to identify those reasons which were of a temporary nature and those which had implications for the long term. For example, illness or family responsibility may be temporary while inadequate education or lower ability as shown by test scores would require some remedial efforts or prevent possible future entry to this type of program. In order to obtain a higher response rate and still obtain useable information, it was felt necessary to provide some "escape" or alternate response categories. Consequently, a number of applicants responded in these "other" categories. Table B.6 reports in detail the data upon which the following analysis is based.

Of the total 1035 cases having data from both program records and follow-up, 458 applicants, 44.3%, had initiated action to withdraw their application, or if accepted, to withdraw from entry to the program. 374, 36%, had been denied admission by the program and 203 applications were still pending. Therefore, this group contains a lower percentage of those rejected than the total applicant group as shown by the PN program records, 36% to 49%, and a higher proportion of those who withdrew by their own action.

Of the 1035, the programs reported a denial to 312 applicants on the basis of tests. 128 of these applicants cited unspecified personal or family reasons for non-entry and an additional 116 gave general reasons or checked the "other" category. In responding to their qualifications and possible future objectives for employment or education, the 312 persons indicated: 21 would seek other employment; 41 indicated they were going to seek a refresher course; 83 indicated that they had changed their objectives; 37 indicated inadequate education as the reason for non-entry; and only 18 indicate selection tests had been the reason for non-entry.

Of the 42 persons who reported lack of child care as a reason for non-entry, 15 had been denied admission to a program, 9 on the basis of testing. A total of 71, 6.9% of the applicants, reported family responsibilities as a reason for non-entry; 27 of these had been denied entry

by the school, 19 on the basis of testing. A change in marital status or plans for marriage were reported by 8.6% of the applicants.

A slightly different categorization was utilized in a further analysis of the student reasons for non-entry by type of school and status of their application. Details by classification are presented in Table B.7. This analysis was to determine whether or not special remedial or assistance programs were more needed by applicants to some types of schools. Also, it was anticipated that this analysis might reveal the persistence of the applicants as measured by the stage of application where persons reported different reasons for non-entry. It might also reveal when the feed-back information was received and how far along they were in the application process before they had to make an alternate choice.

For those reporting lack of child care, this situation tends to occur most often among those applicants to local high school board programs and to occur in the preliminary stage. For those who reported a change in marital status or marriage as the reason for non-enrollment, this situation is more likely to occur at the secondary or completed stage of the application. Those persons who applied to a hospital school are somewhat more likely to marry during the application process.

It should be kept in mind that the follow-up group has an underrepresentation of those who were rejected by the school. 46% of all those rejected by the school did not respond to the questionnaire. Apparently they had made other decisions and were least likely to have a continuing interest or hope of entering in the future. The greatest number of these had applied to local high school board programs.

Summary of Reasons for Non-Entry

The most often reported reason for non-entry across all analyses was the rejection by the schools on the basis of test results. Fewer applicants initiate withdrawal of their application than are denied admission, 585 to 900. The applicants who initiated withdrawals are more likely to give reasons associated with family responsibilities. Indications are that those programs administered by local high school board and the MDTA are attracting an older group who are more likely to have dependents. They also are more likely to have an inadequate education and to be unable to qualify through the testing procedures.

Since programs offered by the MDTA and local high school boards are most often conducted as a relatively independent and separate program, these programs would be least likely to have comprehensive offerings where their applicants could obtain remedial or improvement types of courses to qualify for entrance. Such a circumstance would support the argument for establishing practical nursing programs as a part of area vocational centers or junior colleges which should also offer remedial and supportive courses to facilitate entry to an occupational curriculum of the student's choice. Although there is evidence to indicate that a number of applicants were not able to pursue their application due to lack of child care and other family responsibility, almost half had been denied admission. Approximately 10% of all applicants had not been rejected but had withdrawn due to illness, lack of child care or other family responsibility. Lack of entry due to a change of jobs by the spouse of other influence of the husband accounted for 6.2% of the

reasons for non-entry. A change in marital status or plans to marry accounted for twice as many persons not entering.

Financial Resources of Applicants

889 of the applicants responded to an item on the questionnaire concerning their financial ability to enter and complete the practical nursing program to which they had applied. 54% indicated they had adequate funds to enter and complete. 27% indicated they would need financial assistance to be able to enter the program. An additional 19% indicated they had adequate funds to enter the program but would need help to complete the program. 49% of those in Illinois had adequate resources to enter and complete, while 61% of the Iowa applicants had similar resources. The younger and single applicants and the older married applicants without dependents were most likely to be able to enter and complete the program with their available resources.

Availability of Transportation

Applicants were asked to respond to a question concerning the availability of transportation to and from the practical nursing program to which they had applied. 918 persons responded to this item; 739, 80%, indicated that transportation was available. 5.8% indicated that it would be available "sometimes", while 2.9% indicated they did not have transportation available. An additional 11% indicated that transportation would be difficult.

Multiple Applicants

967 applicants responded to the question of whether or not they had submitted an application to more than one school. 24.4% indicated they had applied to at least one additional school; 44% of the Iowa applicants had made multiple applications. Of those who had applied to more than one school, 60% had applied to two schools; 28% had applied to three schools; and, 12% had applied to more than three. One applicant had applied to six schools. Persons who were completing high school were most likely to have applied to more than one school. Since the Iowa programs filled their class quota at an earlier date, it is not surprising that Iowa had a higher percentage of multiple applicants.

Plans for the Future Regarding PN School Re-Application

942 applicants responded to the items requesting information on whether or not they planned to enter a practical nursing program in the future. 481, 51%, indicated that they did plan to re-apply while 38% indicated that they did not intend to re-apply in the future. The remainder were undecided or did not respond. 417, 74%, of those who indicated that they planned to re-apply in the future were going to re-apply to the same school. The other 26% intended to re-apply to a different school. In comparison, only 25.3% of all applicants had applied to a practical nursing program prior to their application to the criterion class. Previous applications had been submitted by 30.6% in Iowa and 20.4% in Illinois. 57% of the applicants in Illinois indicated a

positive attempt to re-apply while 42% of the Iowa respondents indicated a similar intent.

A further analysis of future intent was made according to the reasons given for non-entry to the criterion class. In the personal and general categories of reasons, 28% indicated that they intended to re-apply. 9% of those who had indicated family responsibilities, 5.4% of those who were unable to obtain child care, and 6.7% of those who had given marriage or change of marital status as reasons, indicated they intended to re-apply at a later date. 28% of the respondents did not specify whether or not they intended to re-apply in the future.

In the "qualifications" category, somewhat over half of the persons who indicated that they did not enroll due to selection tests also indicated that they were going to re-apply. Somewhat over three-fourths of those who indicated "inadequate education" as the reason for non-entry also indicated an intent to re-apply.

Essentially all respondents who indicated "other employment" as a reason for not entering indicated they did intend to re-apply in the future. Two-thirds of those who indicated they needed a refresher course also indicated their intent to enter a PN program in the future.

In total, 31.3% of all persons who were aware that they had not been selected due to test results indicated they intended to try again in the future. A review of the responses by applicants and the reasons given by the schools for non-enrollment raises questions concerning the realistic nature of plans for the future by the respondents. Only 2.7% of the respondents indicated that they had been denied due to low test results. However, this was the largest category of reasons given by the schools. Respondents, typically, gave more socially acceptable or self-protective responses rather than low test score.

Several factors may actually have been in operation. The scores required by some schools are known to be significantly higher than those required by other schools. It is quite likely that applicants denied admission by some schools could have entered and completed the program successfully at another school. The proportion of persons indicating their intent to take refresher or additional education to be able to re-apply is probably highly overestimated. Most probably will not actually pursue such activities on their own.

Employment at Application - School Records

Of the total 1796 application files examined, 1235 contained information concerning current or most recent employment of the applicant. See Table B.8. The following findings are based on those cases where employment was known. 17% of all persons were unemployed at the time of application. Applicants who were in high school at the time of application and who were employed, part-time or full-time, are included with all other applicants. 4% of those at the preliminary stage of application were not employed while 15.4% in the completed stage were not employed. The higher percentage at the completion stage includes a number of persons who had left their job in anticipation of entering school and those still in high school who did not have jobs.

11.2% of all applicants were housewives at the time of application. 91.4% of the 139 housewives had applied to programs operated by local high school boards. Significantly greater numbers of housewives had made

preliminary applications than had continued through to reach the completed application stage.

4.4% of the applicants had been or were employed in a sales occupation. An additional 17% were employed as waitresses and other general occupations. 12% were employed in unskilled non-health jobs. Included in this category are personal service and domestic employees, assembly workers, and farm oriented workers. 73 of 145 applicants in this category had made application to programs operated by local high school boards.

44.4% of all applicants were employed in the health or health related field at positions ranging from the skilled to the unskilled level. 440, 35.5%, of all applicants where employment was known were employed in semi-skilled health occupations; the majority of these were employed as nurse-aids. Approximately 1.1% were employed at the skilled level in health and health related jobs. Such positions included working in medical laboratories, assistant to a dietitian, in a physician's or dentist's office and other similar jobs.

32.4% of all applicants reported employment in a skilled or semi-skilled level job either within or out of the health field. 15.7% of the applicants were employed in unskilled level jobs. Applicants were more often from the semi-skilled level as opposed to the unskilled level regardless of type of occupation. However, the largest single group of applicants were those employed as nurse aides, a semi-skilled health job. At the other end of the employment scale, 1.2% of the applicants were employed at professional level positions. Included in this group were some persons who had earlier completed a baccalaureate or higher degree in a field but now chose to re-enter the labor force through a relatively short-term preparation program. Some were owners of, or planning to open, nursing or sheltered care homes.

Applicants to all types of programs were more likely to have been employed as nurse aides than any other level or occupation.

In 561 cases the records did not show the most recent or current employment of the applicant. This was over 31%. It is interesting to note that approximately 16.3% of those persons' files which were complete did not reflect most recent employment or unemployment. 36% of those in the preliminary stage did not contain information on employment status. Local high school board programs and area vocational school programs were least likely, approximately 25%, to have records of employment status in over 95% of the cases.

The relatively high percent of unknown employment status may reflect a high reliance upon testing as a selection influence as compared to current or prior employment and experience in the health care field.

Local high school board and MDTA programs were more likely to have applicants in the housewife and unskilled non-health categories than the other types of schools. Area vocational, junior college and hospital programs tended to have a higher proportion of applicants from the sales, waitress, general or no employment categories. This find is consistent with the relatively younger and single applicant to these programs.

Previous Health Occupations Experience

While the prior section is based on the current or most recent employment, a further analysis of the application file data was made for

any prior health employment or contact experiences. A total of 636, 57% of those where prior employment information was recorded had had some type of health occupations contact or employment. In addition to direct employment as a nurse aide, 483 persons or 75.9%, or other health worker, information was available which showed that : 17.7% had previously had experiences that involved incidental patient contact; 2.2% had been employed in home health care work; 4.6% had had experiences as candy stripers; 1.6% had been a member of a student nursing club; and, 1.7% had performed work with the Red Cross of a first aid nature. More detailed information relative to the type of employment and experiences by type of school and status of the application are shown in Table B.9.

The records did not show whether or not 681 or 37.9% of the total 1796 applicants had similar prior health occupation experiences. Those persons with previous health experience or contact were about equally distributed across all application stages, approximately 75% of each. Across all stages and the total group, approximately 43% had not had prior health occupations experience or contact. A more detailed examination of the data shown in Table B.9 does not reveal particular types of experience associated with type of school. They are somewhat equally proportionate to the total number of applicants in each type of school and by stage of application.

Employment and Non-Employment Activities at Application and Follow-up

The information in this section was obtained entirely through the follow-up questionnaire. Each applicant was asked in the questionnaire to indicate their employment or non-employment situation at the time of application and at the time of the follow-up. Since the majority of applicants had applied during the spring of 1966 for the classes which started in September and following of 1966 and the first mailing of the questionnaire was sent during May of 1967, the majority of applicants would have been contacted approximately one year following their application for a criterion class. The criterion class would have started about nine months prior. Those who responded to the second or third mailing of the questionnaire responded up to approximately 16 months from the time they had made their initial application.

Generally, the actual number of cases in each category will be reported. Since approximately 1000 cases, actually 1035 at each of application and follow-up, are involved, numbers in a category based on that total can be converted directly to a close approximation of the percentage. A total of 419 persons, or 40.5%, of all persons were employed full time at application; an additional 113 persons, or 11%, were employed on a part-time basis. 209 persons were unemployed; 126 were housewives and 115 were in an "other" non-labor force category which included students who were enrolled in high school at the time of their application. Table B.10 presents a detailed break-down of activities at application and at follow-up.

Of the 53 persons whose activities were "unknown" at the time of application, 34 remained unknown on follow-up; a total of 43 persons or 4.2% including the prior 34 were unknown at follow-up. Eight of those who were unknown at the time of application had entered an educational program by the time they had completed the follow-up questionnaire. Four of these had entered practical nursing programs and two had entered the

RN or health technician program.

The Unemployed at Application

209 applicants reported that they were unemployed at the time of application. No definitions or distinctions between unemployed and housewife were given in the questionnaire. Each respondent chose the classification most appropriate to them. On follow-up, these 209 persons reported 45 still unemployed, 27 housewives, 12 in educational programs with 5 enrolled in RN or health technician programs. A total of 78 were engaged in the above and other non-labor force activities. 107 had become employed full-time and 12 had become employed part-time. 36 were employed full-time and 2 on a part-time basis as nurse aides. 34 were employed at semi-skilled or semi-skilled non-health jobs and an additional 10 were employed at a skilled non-health job. Those who reported themselves as unemployed at the time of application were apparently in a transition stage; the majority, 119, entered the labor force either as full-time or part-time employees, 107 full-time. A total of 41, or 20% of those who were unemployed at application, entered employment in the health field.

Housewives

A total of 126 persons reported that they were housewives at the time of application. On follow-up a total of 177 reported this full-time activity; 83 people were housewives at both application and follow-up. The increase in the percentage in the housewive category on follow-up reflects the young, single age group and the number who withdrew their application to PN school due to marriage or marriage plans. Four of the housewives had entered other educational programs, one in RN, one in PN. A total of 34 had entered the labor force; 25 on a full-time basis, 9 on a part-time basis. 11 had become employed as nurse aides full-time and another 3 on a part-time basis.

Of the 177 who reported being a housewife at follow-up 27 reported they were unemployed when they applied to the PN program. 55 had been employed full-time; 27of these had been employed full-time as nurse aides. An additional 9 had been employed part-time as nurse aides.

This group had proportionately the highest stability across the one-year period.

Full-time and Part-time Employment

419 persons reported full-time employment at the time of application. At the follow-up 523 persons reported that they were employed full-time. 286 persons of the prior two groups reported that they were employed full-time at both application and follow-up. 113 persons were employed part-time at application and 73 were employed part-time at follow-up; 25 persons were in this classification at both points in time. 51 of the others who were employed part-time at application had taken full-time jobs; 25 as nurse aides. Six were part-time nurse aides at both application and follow-up. 11 of those reporting part-time employment at application had entered other educational programs. Eight reported they were unemployed and 14 had become housewives.

31 of the 419 who reported they were full-time employed at appli-

cation had entered other educational programs; some of the 419 had been persons completing high school but who were employed full-time for the summer preceding the beginning of the criterion class. 15 had entered practical nursing programs and 4 had entered RN or health technician programs. 5 had entered short-term health programs; these programs were most often formal nurse aide training programs.

Applicants Employed in the Health Area

A total of 310 persons were employed, 256 full-time and 54 part-time in health occupations positions at the time of application. The largest group within this total was employed as nurse aides, 225 persons. 147 persons were employed full-time as nurse aides at both application and follow-up. 6 persons were employed part-time as nurse aides at application and also at follow-up, 11 persons had changed from part-time nurse aides to full-time and 12 had changed from full-time to part-time.

Of the 225 who were employed full-time as nurse aides at application 21 had entered other educational programs at follow-up and 10 had entered practical nursing programs, 4 had entered a general college program, 5 had entered a RN or health technician program. 27 full-time nurse aides had changed to housewives.

Other Education Programs

101 of the 1035 applicants had entered some type of education program by the time they responded to the follow-up questionnaire. 29 had entered practical nursing programs. The next largest group 24 had entered either a RN or other health technician program. 18 had entered college while a total of 10 had entered a short-term health program which usually was a formal nurse aide program.

Summary of Change in Activities

The great majority of all applicants to PN programs were employed at the semi-skilled level, mostly as nurse aides. The majority continued full-time employment, again, most often as nurse aides. There is a noted shift for those who were unemployed, housewives or in an unspecified conditions to become active in the labor force on a full-time or part-time basis on year later at follow-up. Those who were in the "other" group, mostly students, at application were likely to enter other education programs rather than enter the labor force. 21 of 35 who entered educational programs entered either college or RN or health technician programs. Since entry to these programs would require high school graduation with relatively higher grade point average and standing in their class, they may comprise a disproportionate part of that group who were accepted for the PN program but then withdrew prior to entry.

An analysis across time periods shows a high stability so far as level of employment is concerned. Applicants in the unskilled areas, sales and waitress type of employment tended to remain in those areas. Those in the semi-skilled non-health areas had some tendency to move into the semi-skilled health categories. There is a higher tendency for those in the semi-skilled health and the semi-skilled non-health

to become unemployed or housewives across the time period. These data suggest that part-time employment is more characteristic of the first stage when women are moving from unemployment or housewife into the labor force. It may also reflect lack of a salable skill and the taking of the only jobs available.

There is a relatively high stability among the group so far as labor force participation is concerned. 286 persons remained full-time employed at both points in time, 25 were part-time at both points, and an additional 72 shifted from either full-time or part-time to the other category. The most common orientation for employment is those occupations centering on the semi-skilled health area at application and followup. The relative reduction in the total number of unemployed and "other" categories indicates a sizeable number of people who were either in the decision process of entering or re-entering an educational program or the labor force.

SUMMARY

A part of the PNS was concerned with those persons who applied to the PN programs but who did not enroll in the criterion class. Arrangements were made with each of the cooperating programs to obtain data for each applicant. These data were collected from the regular application and other forms in addition to administering instruments provided by the PNS project. Information was obtained by the study staff directly from the folder of each applicant at the school site. In addition, the PNS sent a follow-up questionnaire to all applicants where an adequate address was available.

The identification of an applicant resulted in being a more difficult problem than had been anticipated. It was difficult to determine at what stage a person actually became an applicant. Many sequences of selection were utilized; at some programs, 4 or 5 activities were accomplished prior to the time an actual application blank was completed.

The great variety of sequences used by the different programs raises a question about some studies that have been carried out through the questionnaire procedure. For example, one national study that included two of the same schools included in this Study reported a response rate of over 90% for all applicants. At those same schools, even though repeated visits were made to the school sites and full cooperation of the staff was given, it was possible to contact only about 75% of all persons who had taken some step for application. Some applicants requested they be delayed to a following class; others extended their application procedure over several months while one or more classes were started; and, the programs sometimes delayed applicants due to a lack of space or for other reasons.

Significant differences were found among the applicants to the programs located in Illinois and Iowa. In Iowa, the applicants were more likely to be persons who were graduating from high school and continuing to a post-high school program the following September. The Iowa schools were more likely to be operated by a junior college or an area vocational-technical school. Applicants to these schools were more similar to those that might apply to other more traditional post-high school programs such as a college or registered nurse program. The Iowa requirement of

high school graduation may have been a strong factor in this difference. Also, apparently, the "image" and "role" of practical nursing in Iowa is much better understood and supported by the health professional fields and the counselors across the state.

Since several of the programs in Illinois were administered by a local secondary board of education as an independent unit they did not have the "college" image. Also, the majority of programs operated by local high school boards were located in large metropolitan centers and offered multiple classes per year. Applicants to these programs were more likely to be older, married, have families and were less likely to be high school graduates. Finances, transportation, care for children, generally lower tested ability and less years of formal education were more likely to be seen as problems in entering and completing the PN program. Apparently, the programs administered by the local high school boards in Illinois are serving a different group than the junior colleges and area schools in Iowa. It may be that the location in large metropolitan centers provides a pool of potential students in Illinois that does not exist, or that has been served, in Iowa. It is also possible that a similar group exists in Iowa but is not being served due to the higher educational requirement.

Two-thirds of all applicants who did not enroll were rejected by the school. The great majority of these were rejected on the basis of selection tests. Others were rejected on the basis of "inadequate education". One-third of all applicants withdrew prior to completion of the application process or chose not to enroll after being accepted by a program. Those applicants who were in the top quarter of their class and scored highest on the tests were more likely to withdraw their application and enter some other type of post-high school education.

A majority of those who were rejected by the school on the basis of test results or inadequate education indicated on follow-up that they intended to reapply, 51% of the total group. Such a finding may reflect a lack of reality on the part of the applicants. It also reflects a pool of potentially successful practical nurses if remedial and transitional programs were made available. The cut-off points for selection used by a number of programs were significantly higher than those used by other programs.

Several kinds of evidence indicate that the applicants were in a process of change and exploration. One pattern appears to be the housewife who is attempting to gain additional education or enter the labor force. A sub-group moved from housewife to part-time or full-time employment if not admitted to school. Over all, the applicants showed a high degree of stability across the time period from application to follow-up. Almost 45% of the total applicants had been employed in the health area. The majority of these were nurse aides. If they did not enroll in a PN program they were most likely to continue employment in the health area, generally at the same level.

Some applicants, particularly to the programs operated by local high school boards in metropolitan areas, anticipated some difficulty in meeting the cost of their education and in obtaining transportation. 27% indicated they did not have adequate funds to enter the program while an additional 19% indicated they would have to have financial assistance to complete the program. A total of 14% indicated they would

have difficulty in obtaining regular transportation during attendance at the practical nursing program.

Applicants were comprised of two groups: (1) a young, single, new high school graduate group, and (2) an older, married with family group. The greatest single reason for rejection was on the basis of standardized ability tests. Those who did not enroll typically continued in employment, generally in the health field, at the semi-skilled level.

CHAPTER III

CHARACTERISTICS OF ENROLLED STUDENTS - GRADUATES AND DROPOUTS

A total of 3146 persons applied to the 45 cooperating schools during the criterion time. As reported in Chapter II, 1796 applicants did not actually enroll in the criterion class. 1350 students enrolled in the criterion class for a percentage of 42.9.

Of the 1350 students who enrolled in the criterion class, 1056 completed the requirements of the program and graduated with the class in which they started. The overall drop-out rate was 21.8%; Illinois had a rate of 28.2% while Iowa had a rate of 10.4%.

This Chapter will focus primarily on the educational background, family characteristics, age, marital status, and other factors concerning all students who enrolled in a criterion class. Generally, the graduates and drop-outs will be reported separately. Later chapters and sections will deal with other personal characteristics, PN school and achievement information and employment.

Methodology

In addition to the data obtained from the school records and by the school faculty for all applicants, additional data were obtained through three on-site testing sessions conducted by the Project staff and through a follow-up questionnaire to each of the graduates and dropouts. Intermediate reports concerning the dropouts were forwarded to the Project staff office from each of the schools at the time a student left the program. These instruments obtained data concerning the staff members themselves, evaluations of students by the faculty, and administrative and historical data from the coordinator of each program. The Final Report, Part II, developed by the University of Iowa staff is the primary report concerning the faculties and programs. Appendix A gives the full data collection schedule and a list of the instruments used.

At each scheduled data collection session the faculty at the school made advance provisions for scheduling and arrangments. Each instrument and schedule was pilot tested prior to final use at schools not cooperating in the research study; modifications and revisions were completed prior to the data collection at the criterion schools. Standardized instruments were administered according to the directions provided by the publisher. Instruments developed by the Project staff were typically presented orally to the groups and were completed item-by-item. Questions and clarifications were made on-the-spot at the time of response.

Three on-site data collection sessions were conducted with the students. The first was conducted within the first two months of the program; most were scheduled between the third and seventh weeks. The second was scheduled at approximately the fourth month the students were enrolled in the program. This period coincided with the more common transition where the balance of the school time was shifting from the

classroom to clinical experiences. The third and final data collection visit was conducted during the final month of scheduled classes at each school. The follow-up questionnaires were sent to the graduates and dropouts approximately two months after the class graduated. At this point most graduates would have taken the state board examination and received a license.

Definitions

The definitions of graduate and dropout as used in this study tended to maximize the dropout rate.

Enrolled Student: An enrolled student is a person who entered with the criterion class and attended at least one day. In a few cases, students started within the first weeek or so and they were included as an enrolled student. In Illinois, a person who had attended a minimum part of an RN program could become eligible for licensure as a PN by attending a minimum of four months of a practical nursing program. Five such students became members of the criterion class. They are not included in these reported data. Most schools, to varying degrees, permitted students who had become ill or were forced to drop out of a preceding class to "drop back" into the criterion class and then continue toward graduation. This practice was most common in the larger programs that had multiple classes per year. Approximately 25 such students became members of the criterion class. Only those students who were repeating or entered the first phase of the criterion class are included in the reported data.

Dropout: Any enrolled student, as defined above, not completing the full PN program with the criterion class was classified as dropout. Persons who were "drop-backs" into a succeeding class for any reason are classified as dropouts in this report. More detailed information is given concerning the dropouts in other sections of the total report.

Graduate: Only those persons who started with the criterion class, completed all requirements above the minimum standards and received the recommendation of the PN program faculty to take the state licensure examination are classified as graduates.

Other specialized definitions used in this report will be given in the appropriate sections.

Age, Race and Marital Status by Type of PN School

The age patterns by type of school are similar to those of the applicants. Overall, the enrolled students are an essentially young group; 27.3% were 18 or 19 years of age; 33.9% were 20 through 24 years. At the local H.S. Bd. and MDTA programs, the enrolled students were significantly younger, on average, than the applicants who did not enroll. A total of 59.8% of the students at the H.S. Bd. programs, 65.4% at the Area Vocational Schools, 62.6% at the Junior Colleges,

47.6% at the MDTA programs, 85.1% at the Hospital programs and 62.8% in the "Other" schools were under 25 years of age. The percentages in the age groups from 25 through 49 are relatively similar except for the 30-34 age group which is somewhat lower. A total of 5.2% were 50 years and above. Table C.1 presents a detailed breakdown by age and type of school.

Across all enrolled students, 48.2% were single, 29.1% were married, and 11.0% were heads of household, (widowed, separated or divorced). There were significant differences in marital status among the types of schools. Students in each of the H. S. Bd., Area Vocational school and MDTA programs were married in approximately 33% of the cases. 29% of the Junior College students were married while 8.9% of the Hospital school students and 18.6% of the "Other" students were married. 19% of the MDTA and 11% of the H. S. Board students were heads of households. Sess Table C.2.

White students comprised 89.8% of the total enrolled students; 138 students were non-white 53.3% of the MDTA, 35.6% of the H. S. Bd. and 9.3% of the "Other" students were non-white. Each of the other types of schools had less than 2.5% non-white students. The higher percentage of non-white students in the MDTA programs and the H.S. Bd. programs reflect their locations in large metropolitan centers. Also, the underlying expectancy of relationships between minority groups and economic levels would result in the higher percentage of non-whites in the MDTA programs.

Choosing PN Training

A series of questions were asked during the first on-site testing session to determine how the students made their choice to enter PN training. It was assumed that if influential others could be identified, the time of choice and the student's sources of information concerning PN training could be determined, the results might be beneficial in recruitment and guidance activities. Table C.3 gives a more detailed presentation of the data.

In response to the question, "How long before entering this school did you decide to go into practical nursing?" approximately 6% indicated that they had made the choice within one month before entering the school. Approximately 25% had made the decision 6-12 months before entering; and, 38% had made the decision more than twelve months before entering. 87% of the 18-19 year old group reported they had given consideration to attending a practical nursing program while they were in high school. Approximately 47% of the 20-24 age group had similarly considered going to a PN school while they were in high school. The study conducted by Larry J. Bailey and reported in a later Chapter of this Report made a more detailed investigation of the choice of PN training by the 18-19 age group.

The time of choice was also analyzed according to whether the enrolled students had graduated or dropped out. There were no essential differences between these groups in the length of time prior to entry that they made their choice to enter PN training. Also, there were no differences between the graduates and dropouts on the question

of whether they considered going to PN school while in high school. Of those students 25 years and above, almost 50% indicated that they had decided to enter PN training more than a year before actual entrance. Since there was as much as a year from application to entry, the decision to enter PN training was most often made in a relatively short time prior to application, usually less than six months.

Influence of Others and First Discussion of Entering PN Training

All enrolled students were asked to give a written, open-ended, response to two questions: (1) With whom did you first discuss becoming a practical nurse? (2) Who influenced you the most in your decision to become a practical nurse? In addition to identifying the relationship of the person, the students were asked to further indicate in their responses the occupation of the persons; the one with whom they first discussed entry and the one who was most influential. All responses were coded into established formats for analysis. Table C.3 gives a detailed two-way breakdown of the persons by their occupations and relationship.

In 27.6% of the cases, the student had first discussed becoming a PN with their parents; 15.5% with a friend; 11.8% with their spouse; 6.7% with a co-worker; and, 23.6% with some other person. The occupations of 35% of these persons were unknown or listed as "none," including housewives. 13.9% had first discussed becoming a PN with an RN; 10.4% with a teacher or counselor; 2.9% with a representative of the state employment service; 8.1% with an LPN; and, 7.7% with a worker in the non-health field. Of the RNs with whom the students had discussed it, 29.4% were co-workers; 18.7% were indicated as a friend; and, 20.3% were indicated as being in some other category. Of the LPNs who had been the first person to discuss becoming a PN with the students, they were more often listed as a friend, 39.5%.

Although first discussions were more often held with persons having a family relationship, 20.8% of all cases, there was a tendency for persons more directly related to the health occupations to be most influential in the students' decisions. In total, of those persons whose occupations were known, approximately 36% of the persons who had first discussions were associated with the health occupations field while 61.8% of the persons who were most influential to the PN students had occupations in the health occupations area. By relationship, "friends" were the most influential group, 18.1%; parents were most influential for 14.1%; and, co-workers in 11.0%. By occupational groups, RNs were most influential for 23.3%; LPNs for 20.2%; and, teachers or counselors in 6.1%. Approximately 40% of the LPNs listed as most influential were also indicated to be a friend. Next most influential group of LPNs were co-workers, 19.7%. 26.7% of the RNs were indicated as being co-workers and an additional 20.3% were indicated as being friends. In total, state employment service personnel were listed as being most influential in only 11 cases, 0.8%; 39 persons had their first discussion concerning PN training with employment service personnel.

Additional analyses were made to determine potential differences between graduates and dropouts. No significant differences were found either for first discussions or most influential persons. There was some tendency for the dropouts to have been more oriented to relatives, friends and siblings, and the graduates were slightly more likely to have had their discussions and received influence from persons in the health occupations field, particularly nursing.

Reasons for Entering PN Training

An attempt was made to determine the primary reasons for selecting PN training. This information was obtained through an open-ended response where the monitors of the test session explained the procedure and answered questions during the instrument administration. For purposes of this report the wide number of varying reasons were collapsed into four general categories. A more complete breakdown of these data are in Table C.4. The four general categories are: (1) influence of others; (2) opportunity for the students; (3)personal; (4) other. Somewhat over one-third of all persons indicated their primary reason for taking PN training was "a desire to help people." An additional one-third of all responses were also classified in the "personal" reasons category. Approximately 19% gave "opportunity" as a primary reason; less than 1% reported influence of others; 3.5% indicated financial need; and, approximately 9% gave job satisfaction. By states, the reasons were fairly similar. There was a somewhat higher tendency for the Illinois students to indicate the personal reasons of "desire to do something productive" and the "desire to help people." These reasons were more often reported by the older students. The category, "preference for nursing" accounted for somewhat over 10%.

An analysis to determine differences between graduates and dropouts showed no significant differences. The dropouts were somewhat more likely to have given miscellaneous or have unknown reasons for entering the programs than were the graduates.

Summary

In summary, the anaylsis of data in this section indicated the major reasons for entering PN training resulted from a personal commitment, very often a desire to help others or to do something productive. First discussions concerning the entry into practical nursing were held with relatives and friends in the majority of cases. As interest developed,the potential students tended to seek information and discuss practical nursing with persons from the health occupations. They were more likely to be influenced by RNs and other LPNs who were co-workers or friends. The younger students, particularly in Iowa where the programs are well known and guidance personnel are well acquainted with the programs, were more likely to make their decisions to enter practical nursing while in high school. The majority of students had made the decision within the year prior to entry. The response, "I always wanted to be a nurse," occurred quite often but it appears to be a

highly generalized type of idea. The idea was in reference to any type of nursing, not necessarily practical nursing. The actual decision to implement this generalized desire appears to be made relatively soon prior to entry. An attempt to determine differential influences and reasons between the graduates and dropouts did not reveal significant differences.

High School Records of Enrolled Students

Many studies, including those concerned with practical nursing, have found a high relationship between the highest grade completed and success in educational programs. Grade point averages (GPA) and other high school achievement measures have also been significantly correlated. As cited in earlier sections, Iowa has a requirement of high school graduation or its equivalent for entry into PN programs; Illinois requires education of at least tenth grade. Either state will accept the appropriate G.E.D. tests in meeting these requirements. The data reported in this section were obtained by the Project staff directly from the school records and from the students. In many cases, particularly those having to do with rank in class and final GPA, the school records were incomplete. In the case of recent high school graduates, many had applied and been accepted while still in high school, and, therefore, the transcripts were not complete. High school completion for the older students is less meaningful since the general population in those age groups did not complete high school at the rates of current years. In the MDTA programs, the high school records and transcripts were less likely to be on file or complete. Often only a statement of highest grade completed was furnished or sometimes no records were available. In each section, the basis of the known cases is reported.

Highest Grade Completed

A total of 147 students had gained admission to the PN programs by demonstrating educational achievement on either the GED exam or through correspondence graduation. The significant majority had used the GED procedures. 109, 74% of those with high school graduation equivalency, graduated from the PN programs. The greatest number of entries through GED was into the H.S. Bd. programs. Proportionately, the next higher number were enrolled in the MDTA programs. Overall, the 74% completion rate for those enrolled on the basis of GED or correspondence qualifications is only slightly lower than the 78% for the total of all enrolled students. Completion percentages of students in this category by type of school are: Area Voc. School, 81%; H.S. Bd., 73%; MDTA, 63%; Junior College, 87%; and Hospital, 77%. By states, 67% graduated in Illinois and 88% of those in Iowa graduated. Table 3.1 gives information concerning educational level and type of school.

TABLE 3.1: HIGHEST GRADE COMPLETED BY TYPE OF SCHOOL

	GRADUATES					DROP-OUTS					
TYPE OF SCH.	Less than 10*	10#	11	12#	Sub-total	Less than 10*	10#	11	12#	Sub-total	Total
Loc. HS Bd.	23	27	18	330	398	11	8	10	77	106	504
A. Voc. Sch.	8	4	0	131	143	2	1	0	13	16	159
MDTA	14	13	11	150	194	18	11	13	61	103	297
Jr. Col.	3	5	9	142	159	0	0	1	19	20	179
Hosp.	2	0	1	136	139	2	2	1	24	29	168
Other	1	0	1	21	23	2	3	2	13	20	43
	51	49	40	916	1056	35	25	27	207	294	1350
						51	49	40	916		
TOTAL BY GRADE LEVEL						86	74	67	1123		
% DROP-OUT BY GRADE COMPLETED						40.1	33.8	40.3	18.4		

* includes unknown
\# includes GED

83.2% of all enrolled students had completed the 12th grade or equivalent, GED or correspondence. Persons with less than 12th grade completion were more likely to be enrolled in a H.S. Bd. or in a MDTA program. These programs were typically located in larger metropolitan centers and to have an average higher age student than the other types of schools. Persons who had less than 12th grade had a much higher dropout rate than those with 12th grade completion. The percentages of dropouts by grade level shown in Table 3.1 are somewhat misleading. The major contribution to the high dropout rate of those with less than 12th grade completion was from the MDTA programs.

Approximately one-half of all dropouts were attending MDTA schools. Several factors contribute to this high percentage. The students were selected as being in the proverty group and less likely to be able to achieve employment without assistance. Also, a higher percentage of the total students in this category were attending programs in large metropolitan centers that offered multiple classes per year. The practice of "dropping-back" was more common in these programs and contributed to the higher dropout percentage. Approximately 50% of all students enrolled in MDTA programs with less than 12th grade completion graduated from the program.

Rank and Grade Point Average in Last High School Class - Graduates and Drop-Outs

The grade point averages in this study are based on a 4.0 scale. The data obtained directly from students and that obtained from the school records were compared. Based on known cases, the student estimates and the data from school files correlated at .53 for graduates and .56 for dropouts. These correlations are somewhat lower than are probably the actual case due to incomplete records and problems in converting all types of transcripts to a common scale. However, it would seem that in general counselors and others who are working with students can rely to some degree on the students' estimate of their rank in class, at least in preliminary discussions. GPA and rank in class are much less meaningful for older students.

Table C.5 presents rank in class and GPA by type of school. There was a strong positive relationship between the completeness of the student records and the graduation rate at individual schools. The highest dropout rate was in fact at the school with the least complete records. In general, records were more complete at the Iowa schools than at the Illinois schools. Some of this difference can be attributed to the required high school graduation in Iowa schools which contributes to the enrollment of a significantly younger group from a pool of qualified applicants. In many cases, only those students who could provide complete records were admitted.

High School Achievement and PN School Completion

Completion percentages for all enrolled students by type of school are as follows: Area Voc. School, 89.9%; H.S. Bd., 79.0%; Junior College, 88.8%; MDTA, 65.3%; Hospital, 82.7%; and, Other 53.5%. See Tables 3.1 and C.5.

The greatest proportion of all enrolled students had been in the second and third quartiles of their last high school class. By student estimates, 43% were in the second quartile and 40% were in the third quartile; based on the known cases from the records 28% were actually in the second quartile and 38% were in the third quartile. Only 4% of the students estimated their rank to be in the 4th quartile while, based on known data, 19.5% were actually in the fourth quarter. In general, the students tended to over estimate their standing in class on a quartile basis. Approximately 83% of all students who estimated that they were in the second quartile actually completed; 76% of those who estimated their rank in the third quartile graduated; and, 63% of those who estimated their standing in the fourth quartile actually graduated. 68% of those who ranked in the fourth quartile as based on data from the records actually completed the PN program while approximately 85% of those ranking in the third quartile graduated. Table 3.2 gives the completion percentages by type of PN school.

TABLE 3.2 : COMPLETION PERCENTAGES BY GPA, RANK IN HIGH SCHOOL CLASS AND TYPE OF PN SCHOOL

	AVERAGE GRADE POINT*				RANK IN LAST H.S. CLASS*			
TYPE OF SCH.	A	B	C	D-F	Top Quar.	2nd Quar.	3rd Quar.	Bottom Quar.
A. Voc. Sch.	100	91	91	71	100	87	94	81
Loc. H.S. Bd.	100	92	80	67	87	86	85	71
Jr. Col.	100	91	85	100	100	94	85	80
MDTA	73	80	72	48	74	86	73	53
Hosp.	100	90	85	56	95	87	87	70
Other		67	79		100	100	67	45
Total % Cat.	93	89	82	58	90	88	85	68

All table entries shown in percents. N in category shown on other tables. * Grade Point Average and Rank in Class is based on known cases from school files. All percentages are based on known cases.

The students were somewhat more able to estimate their GPA than to estimate their rank in class by quartiles. Based on known data from the files, 52% of all enrolled students had a C average, 34% a B average, 4% an A average and 9% a D or F average. Completion percentages were 93% for the A average, 89% for B average, 82% for C average, and 58% for D-F average students. Students enrolled in the Iowa programs had a higher GPA and rank in class than those in the Illinois programs.

Overall, the enrolled PN students were primarily B and C students with slightly more C than B students, which ranked them in the second and third quartiles of their last high school class of attendance. Although there was a positive relationship between GPA and completion, those students with D and F averages were able to complete the program in a majority of the cases. See Tables C.6A and C.6B. More detailed correlations among high school achievement and other standardized tests are reported in Chapter IV.

The graduates were more likely to have been in the second or third quartiles while the dropouts were more likely to have been in the third or lower quartiles of their high school class. Approximately 44% of the PN graduates were in the top half of their high school class as compared to 28.6% of the dropouts. The relationship between rank in class and graduation or dropping out was significant.

Type of High School Program

All students were asked to indicate the type of high school curriculum they followed when last in high school There were no significant differences in the proportion of students following each type of curriculum and the type of PN program in which they enrolled. A total

TABLE 3.3: RANK IN CLASS* BY TYPE OF HIGH SCHOOL PROGRAM

TYPE OF H.S. PROGRAM	N	%	RANK IN QUARTERS					TOTAL	
			UNKNOWN	Upper	2nd	3rd	Lower	N	%
Unknown	(1)	-----	10	0	2	2	0	(3)	-----
College	622	59.6	194	68	129	170	61	428	65.5
General	422	40.4	197	33	62	86	44	225	34.4
N	1044	100.0		101	192	258	105	653	100.0
%				15.4	29.3	39.3	16.0	100.0	
			DROP-OUTS						
Unknown	(24)	-----	18	1	2	0	3	(6)	-----
College	120	44.4	62	6	11	22	19	58	45.7
General	150	55.6	81	4	14	24	27	69	54.3
N	270	100.0	161	11	27	46	49	127	100.0
%				8.3	20.3	34.6	36.8	100.0	

*Rank in last high school class as determined by school files.

Contingency X^2 = 32.28 for 3 df sig. at .001 level for grads and dropouts.

All percentages based on known cases. Totals differ due to unknown cases.

of 742 enrolled students, 55%, had pursued a college preparatory programs while in high school. See Table 3.3 (above). Since the great majority of all high school students, at least 70-75%, follow a college preparatory program while in high school, the relatively lower percentage of enrolled PN students who had followed a college preparatory curriculum in high school would indicate that the PN programs drew a proportionately higher percentage from those who followed a program other than college preparatory.

Overall, students who had followed a college preparatory curriculum had an 83.8% completion rate while those who had followed a general curriculum had a 73.8% completion rate. Independently, at each of the types of PN schools the students who had followed a college preparatory

program had an 8 to 14% higher completion rate. A part of this discrepancy can be accounted for due to the fact that persons who had less than high school completion and persons who had been out of high school for some years were more likely to respond that they had followed a general curriculum while in high school. An additional explanation may be the fact that counselors tend to advise persons with higher ability into the college preparatory curriculum.

Based on all known cases, approximately 65% of all graduates had pursued a college preparatory program while 34% had followed a general curriculum. See Table 3.3. For the dropouts, 46% had followed a college prep program while 54% had followed the general curriculum. In the case of both the graduates and the dropouts, those students who had followed the college prep curriculum had tended to score somewhat higher in high school rank.

High School English, Math, and Science Courses

Data were obtained in an attempt to investigate possible relationships among English, math, science, and practical arts courses as a part of the high school program and success in the practical nursing programs. A 4.0 scale was used for determination of the GPA. The graduates had taken an average of approximately one semester more work in each of English, math and science than the dropouts. By averages, the graduates had taken 7.1 semesters of English, 3.8 semesters of mathematics, 4.3 semesters of science, and 7.1 semesters in the practical arts area. The dropouts had taken 6.9 semesters of English, 3.5 semesters of math, 3.9 semesters of science, and 7.1 semesters of practical arts. The GPAs for the graduates were: English 2.4, math 2.1, science 2.2, and practical arts 2.5, while the dropouts had GPAs of 2.0, 1.9, 1.9, and 2.1 for the same areas respectively. All courses on the transcript were included in the appropriate category regardless of title, including remedial and "generalized" courses.

Since the graduates were more likely to have taken the college prep curriculum, there may have been a difference in the courses themselves. An analysis of types of courses taken by type of PN school attended showed no significant differences. There did not appear to be significant relationships among either the number of semesters taken in any one of the subject matter areas or the grades attained with success in practical nursing. The Junior College students did not show a higher mean number of science semesters than the average group. This finding should be interpreted with caution since a more detailed analysis with only recent high school graduates was not accomplished. The analyses were performed across all students and all courses.

PN School Completion by Age and Educational Background

Tables 3.4 A and 3.4 B report the numbers of persons and the PN program completion percentages for each of the age groups by educational background and state. A Chi-square analysis comparing the highest grade completed with graduation or dropping out shows a significant relationship between the amount of education and PN school completion.

TABLE 3.4 A: PN SCHOOL COMPLETION BY AGE AND EDUCATIONAL BACKGROUND (FROM STUDENT RESPONSES)

	HIGHEST GRADE COMPLETED									
	GRADUATES					DROPOUTS				
AGE	10 or less	11	12	N	%	10 or less	11	12	N	%
18-19	0	0	297	297	28.3	0	3	64	67	24.7
20-24	10	6	341	357	34.0	3	8	87	98	36.2
25-29	8	5	70	83	7.9	3	4	15	22	8.1
30-34	12	6	38	56	5.3	4	3	5	12	4.4
35-39	17	4	49	70	6.7	9	0	16	25	9.2
40-44	20	10	47	77	7.3	6	2	3	11	4.1
45-49	18	7	38	63	6.0	5	3	6	14	5.2
50+	8	3	36	47	4.5	9	3	10	22	8.1
Tot. N	93	41	916	1050	100.0	39	26	206	271	100.0
%	8.9	3.9	87.2	100.0		14.4	9.6	76.0	100.0	

All data based on known cases.

Contingency $X^2 = 22.8$ for 2 df., significant at .001 level.

There is a general trend for each older age group to have a somewhat lower percentage with high school completion. The exception to this trend is the oldest age group, 50 and above. Since this group is at the maximum admissible age in most schools, they are probably screened more carefully. It is interesting to note that the 22 students who were 55 years of age or above had approximately the same completion rate as the average of all students. The graduates for each age group had a consistently higher percentage of persons in that age group with high school completion than the dropouts. The low completion rate for all students in the 50-54 age group is consistent with other data that show a lower high school completion. Also, a higher percentage of this group met the conditions for selection in MDTA programs.

Age, Marital Status and PN Program Completion

The mean age of all enrolled students was approximately 27 years. The median age for the total group was 21.5 years. The mode, or most common age, was 19 years; approximately 27% of the total. Approximately 62% of all enrolled students were under 25.

Marital status was classified into four categories: (1) unknown, (2) single, (3) married, and (4) head of household; head of household

TABLE 3.4B COMPLETION RATES BY AGE AND STATE

AGE	% HIGHEST GRADE COMP.			% H. S. COMPL. FOR EACH AGE GRP.		COMPLETION RATE FOR EACH AGE GROUP					
						Iowa		Illinois		Both States	
	10th or less	11th	12th	GRAD.	D. O.	N	%	N	%	N	%
18-19	0.0	0.0	82.3	100.0	95.5	155	89.7	214	75.3	369	81.4
20-24	76.9	42.9	79.7	95.5	88.8	175	89.8	281	71.2	456	78.3
25-29	72.7	55.6	82.3	84.3	68.2	26	92.4	79	74.7	105	79.1
30-34	75.0	66.7	88.4	67.9	41.7	19	100.0	50	72.0	69	79.8
35-39	65.4	100.0	75.4	70.0	64.0	26	84.7	72	70.9	98	74.5
40-44	76.9	83.3	94.0	61.0	27.3	30	90.0	59	84.8	89	86.6
45-49	78.3	70.0	86.4	60.3	42.9	33	81.0	46	74.0	79	81.1
50-54	47.0	50.0	78.3	76.6	45.4	16	68.8	32	59.4	48	62.5
55+						10	100.0	12	58.4	22	77.3

All data based on known cases

Contingency χ^2 = 22.8 for 2 df. significant at .001 level.

was a collapsed category including separated, widowed and divorced. In all reports the single group includes four persons who were members of religious orders. Table 3.5 gives age, marital status and completion data.

In some references, the term "completion rate" is used. The completion rate is the percentage of students in the reference category who graduated from the program. The completion rate plus the dropout rate equal 100%. Across the total group, the dropout rate was approximately 22%.

Some earlier studies have shown the younger and single groups to have the highest dropout rate. This was not found to be the case in the present study. The youngest age group, 18-19, had the second lowest dropout rate; this was 18.6%. Most of the age groups had relatively similar dropout rates. They were: 18-19 year olds, 18.6%; 20-24 age group, 21.7%; 25-29 age group, 20.9%; the 30-34 age group, 20.2%; 35-39 age group, 25.5%; the 40-44 age group was 13.4%; the 45-49 age group was 18.9%; the 50-54 age group was 37.5%; and, the 55 and above age group had 22.7%. The higher dropout rates for the 35-39 and 50-54 age groups existed in each State. In Iowa, all 10 students who were above 55 years of age graduated; 7 of the 12 students of a similar age in Illinois graduated.

Marital status was known for all except one graduate and 16 dropouts. Based on known cases, 59.3% of all students were single; 29.6% were married; and, 11.1% were heads of households. The percentage of all students completing in each of the marital status groups are: single 80.2%, married 79.9%, and, heads of households 71.6%. The dropout rates by State showed that the single and married students had approximately the same rate in each State while the heads of households were higher in each State. In Illinois, the single students had a slightly higher dropout rate, 26.5%, as compared to 24.7%, than the married. Heads of households had a dropout rate of 34.2% in Illinois and 12.5% in Iowa. This higher dropout rate for the heads of households category was statistically significant beyond the .05 level.

While approximately 7.5% of all students were in the 25-29 age group, 19.6% of all heads of households were in this age group. 12.8% of all heads of household were in the 30-34 age group while approximately 5% of all enrolled students were in this age category; and, 15.5% of the heads of household were in the 35-39 age group as compared to approximately 7% of all students.

The completion rates for married males and for married non-whites was much higher than the completion rates for single males and single non-whites; 68.0% as compared to 47.7% in the case of the non-whites and 90.9% as compared to 75.0% in the case of married males. The relatively small numbers of males and single non-whites should be noted.

Other Education in Addition to High School

Several questions were asked to ascertain the extent to which the enrolled students had participated in other types of educational programs in addition to high school. Some questions also asked the purpose of attendance and the type of school attended. Data were obtained

TABLE 3.5: AGE AND MARITAL STATUS BY PN SCHOOL COMPLETION

MARITAL STATUS	AGE 18-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55 Plus	Unknown	TOTAL N	%
GRADUATES												
Unknown	1	1	0	0	0	0	0	1	0		3	0.4
Single	294	302	23	3	5	1	2	0	2		632	59.8
Married	4	39	40	41	52	59	47	20	13		315	29.8
Separated, Widowed & Divorced	1	15	20	11	16	17	15	9	2		106	10.0
Sub-Total N	300	357	83	55	73	77	64	30	17		1056	100.0
%	28.4	33.9	7.8	5.2	6.9	7.3	6.1	2.8	1.6		100.0	
DROP-OUTS												
Unknown	0	0	0	1	0	0	0	0	0	15	16	5.4
Single	66	77	7	2	3	2	0	0	0	0	157	53.4
Married	3	15	6	4	15	10	10	13	3	0	79	26.9
Separated, Widowed & Divorced	0	7	9	7	7	0	5	5	2	0	42	14.3
Sub-Total N	69	99	22	14	25	12	15	18	5	15	294	100.0
%	23.5	33.7	7.5	4.8	8.5	4.0	5.1	6.1	1.7	5.1	100.0	

Mean age of enrolled = 27.3 years
Mean age of graduates = 27.1 years
Mean age of drop-outs = 27.9 years

Percentages based on total enrolled and includes unknowns.

concerning the number of months, or equivalent full-time months, in attendance. Information was obtained by open-ended questions and then coded into consistent categories. Sources of education included: public schools, proprietary schools, parochial, military training, on-the-job training, correspondence, adult education, junior college, or college and university. Purposes for attendance were classified according to: college degree, general, occupational, avocational, RN, PN, nursing aide, business school, and beauty school. A total of 472 persons, 35.7%, had attended some other formal type of educational program in addition to high school prior to enrolling in the PN program. The most common was enrollment in a business school, 97; 87 had enrolled in other types of occupational programs while 67 had enrolled in a general college program. 65 persons had at least started a RN program and an additional 12 had previously been enrolled in a PN program. 49 had attended a nursing aide program.

Most of the persons who had attended an additional education program had done so for a relatively short period of time. Approximately 28% had attended for 1 to 3 months; approximately 20% had attended 4 to 6 months; 35% had attended 7 to 12 months; and, approximately 14% had attended from 13 to 24 months. In total, 17.7% had continued in the educational program for more than one year. There were essentially no differences between graduates and dropouts in the length of time they had attended an additional formal education program.

There were differences between the graduates and dropouts according to the type of school attended for additional education and the purpose for which they attended. 26.4% of the graduates listed colleges or universities as their place of additional education while only 19.6% of the dropouts indicated that they had attended a college or university. 28.1% of the graduates indicated they had attended a RN, PN or aide program as their purpose in attendance. 21.6% of the dropouts indicated that they had attended a business school, most often a private one. These patterns of attendance would tend to confirm the prior data that the graduate group contained a higher proportion of persons with higher ability levels. It was somewhat surprising that almost 45% of the persons enrolled in MDTA programs reported some additional formal education. Most often this was an "occupational program" in a "public" location.

100 graduates and 34 dropouts reported a second attendance in another formal education program. By percentages, approximately one-third had each of an additional 1 to 3 months, 4 to 6 months and 6 months or over. 46.1% of these 134 persons indicated they had attended a RN, PN or nursing aide program. The dropouts were more likely to have attended an aide program than the graduates.

Approximately 5% of all enrolled students had had some prior participation in a RN program. The percentages were similar across all types of PN schools. Five to fourteen percent of all enrolled students in the six types of schools had some college or university attendance. From four to nine percent had attended a junior college. Of those students in MDTA schools, 14% had some college or university training and an additional 4% had attended a junior college. The relatively high indication of prior attendance at a program associated with nursing would indicate a number of the students had a long standing interest in nursing and had attempted to obtain preparation at a prior time. It may also indicate that a number of persons who found it necessary to drop

out of the criterion class will also re-enter at a later date. 39 of the 140 who listed two attendance periods at other educational programs indicated attendance at the same type of program for the same purpose. This would tend to indicate a high persistance and relatively firm occupational choice for this group.

Age, Marital Status and Immediate Family

Data were obtained in an attempt to investigate the possibility that the number of dependents, including children, might be a relevant factor in whether or not a student completed the practical nursing program. Definitions used in this section are as follows:

Dependents: Dependent, as used in this study, is defined to be an individual who is dependent upon the enrolled student for financial or other support. Included are the student herself and any others to whom she may be providing support and could include her husband, children, parents or others. Dependents did not have to be living in the same household. If a spouse provided the primary support for the student's family then the members were not dependents of the enrolled student.

Children now living at home: This reference is to children of the student living in the home of the student. Included in the definition are natural, step, foster or other children.

Children of less than school age: Children defined as above but limited to those who were less than six years of age and not attending school, including kindergarden, on a regular basis.

Under the above definition, a number of single students indicated one or more dependents while a number of married students indicated no dependents. In references to number of children living at home, this includes all children whether or not they are dependents.

In response to the question of whether or not a student was "primarily self-supporting" 350, or 28%, indicated that they were primarily self-supporting; 938 indicated that they were not primarily providing their own support while 32 persons did not respond to this item. A total of 25.9% reported that they also provided the primary source of support for one or more other dependents. Of those who reported that they were primarily self-supporting, 76.8% completed the PN program while 81.1% who were not providing similar support completed the program. This difference of 4.3% in the completion rate indicates a relationship between family financial responsibilities and the chances of completing the PN program.

The higher dropout rate in the head-of-household group, who were also more likely to be self-supporting and to have dependents, is consistent with this finding. Table 3.6 reports the number of children and number of dependents for each of the graduate and dropout groups. Of the 350 students who reported that they provided the primary source of support for dependents, including themselves, approximately 60% had one dependent; 15% had two dependents and 10% had three dependents. The completion rates for students with two through 6-or-more dependents were low. The completion rate for all students who had no dependents was 80.3%; one dependent 81.8%; two dependents 66.0%; three

TABLE3.6: DEPENDENTS OF GRADUATES AND DROPOUTS

NUMBER OF CHILDREN OR DEPENDENTS	All Dependents		CHILDREN Living at Home		Less than School Age		In Grades K - 6	
	N	%	N	%	N	%	N	%
GRADUATES								
None	786	74.8	689	65.7	917	87.8	826	79.3
1	171	16.2	107	10.2	100	9.6	101	9.6
2	35	3.3	104	9.9	18	1.7	73	7.1
3	21	2.0	70	6.7	8	0.9	31	2.9
4	20	2.0	41	4.0	---	----	9	0.9
5	8	0.8	21	2.0	---	----	1	0.1
6 or more	9	0.9	16	1.5	---	----	1	0.1
Total	1050	100.0	1048	100.0	1043	100.0	1042	100.0
DROPOUTS								
None	184	68.1	169	62.1	229	85.0	219	81.1
1	38	14.0	39	14.5	27	10.0	28	10.4
2	18	6.8	29	10.8	11	4.1	15	5.5
3	14	5.2	16	5.6	2	0.7	4	1.5
4	7	2.5	13	4.5	1	0.3	4	1.5
5	3	1.1	4	1.5	---	----	---	----
6 or more	6	2.3	3	1.0	---	----	---	----
Total	270	100.0	273	100.0	270	100.0	270	100.0

All totals based on known cases.

dependents 60.0%; four dependents 74.1%; five dependents 72.7% and, six-or-more dependents 60.0%. 858 persons reported no children living at home while 146 students reported one child at home and 133 students reported two children at home. 74.8% of all graduates reported no children at home while 68.1% of all dropouts had a similar situation. Although there is a somewhat higher dropout rate, 7%, for those with children at home, 264 of the 359 students who reported having children at home graduated from the PN program, a percentage of 73.5. This percentage is approximately 5% below the rate for the total group.

A total of 1146 students reported that there were no children in the home of less than school age; 127 students reported one child, 29 reported two children, 10 reported three children. 129 persons reported children in grades K through 6; 88 students reported two children in grades K through 6. 15 persons reported four or more children in grades K through 6. The completion rate for those students without dependents or with one to three children of less than school age in the home was approximately the same, 80%. The completion rate for those with two

children of less than school age in the home was lower, 62%. Persons with children living in the home had approximately a 4% higher dropout rate and those with children of less than school age had approximately a 3% higher dropout rate than those with no children in the home.

Of the 229 students enrolled at those five schools which had the highest dropout rate, 51 to 42%, approximately 40% had children at home and approximately 50% had dependents. These percentages are consistently higher than the other schools that had a lower dropout rate. For example, of the 169 students who were enrolled at the five schools having the lowest dropout rate, 5.3% to 2.6%, approximately 27% had children in the home and approximately 30% had other dependents. The head of household group and the older students were more likely to have dependents while the younger married students were more likely to have children living at home, particularly children of less than school age or in grades K through 6.

Other Factors Related to PN Program Completion

Several selected variables were investigated in attempts to identify factors that might be related to whether or not an enrolled student completed the PN program.

Prior sections reported a significant relationship between the number of years of high school completed, GPA, rank in class and completion of the PN program. A further analysis was made of those students who had less than 12th grade by the type of PN school attended. Approximately 90% of all students completed at the Area Voc. Schools while only 70% with less than 12th grade education completed. 79% of all students completed at the H.S. Bd. programs while 76.8% of those with less than 12th grade completed. In the MDTA programs, 65.3% of the total completed while 53.8% of those with less than 12th grade completed. In the Junior Colleges, 88.8% of all students completed and 100% of those with less than 12th grade completed. In the Hospital Schools, 82.7% of all students completed while 50% of those with less than 12th grade completed. In the "Other" category, 53.5% completed while 30% of those with less than 12th grade completed.

With the exception of the Junior College programs, the students with less than 12th grade had a lower completion rate at each of the other types of programs. The more stringent screening of the non-high school graduate students at the Junior Colleges may account for the 100% success of the 15 students in this category. In the other types of schools it would appear that the person with less than a 12th grade education had a proportionately better chance of completion at the H.S. Bd. programs or the Area Voc. Schools than at the other types of schools. They had the least chance of completion in the Hospital Schools or in the MDTA.

All enrolled students were asked to indicate whether the last school of attendance was a public or non-public, usually parochical, high school. 15.4% of the total students had last attended high school in a non-public school. Of those students attending hospital schools, 37.5% had attended a non-public high school. The over all completion rate for the public and non-public high schools were quite similar, 79.9% and 77.4% respectively.

In a further attempt to identify factors that may be associated with higher dropout ratios, the 45 schools were classified into one of five categories according to the dropout rate at that particular school. Five categories were established. The five schools with the highest dropout rates had dropout rates from 50.8 to 42.0%; the second highest category contained 9 schools with dropout rates from 39.1 to 26.9%; the next category contained 17 schools that had 25.0 to 12.5% dropout rates; the next category contained 9 schools with dropout rates from 12.1 to 5.9%; and, there were five schools in the lowest dropout category which had 5.3 to 2.6% dropouts. All of the schools in the highest dropout rate category were located in Illinois and enrolled from two to six PN classes per year. Three of the five schools were operated under MDTA contracts and all five are located in large metropolitan areas. In general, the student records concerning high school data and other factors were the least complete at these schools.

Three of the 9 schools in the second highest dropout category were also operated under MDTA contract. All except one of the 9 were also located in Illinois. One factor which contributed to the high dropout rate at the 5 schools with the highest dropout rate was the definition of dropout as used in this study. Since all schools in this category operated multiple classes per year, it was possible for them to utilize the "drop-back" process on a more regular basis than schools in any other category. Also, as a matter of practice this procedure was utilized at these schools. It should also be pointed out that the requirements for being eligible for support or enrollment at a school under a MDTA contract specify conditions which would tend to reduce the chances of completion. Factors such as financial ability, family responsibilities, lower educational background and other factors are included in these conditions.

Most Recent Employment and Employment During PN School Attendance

Questions were included in the data collection sessions to obtain information concerning whether or not the students were employed immediately prior to entry into the PN program and also their most recent employment, whether it was immediately preceding entry or sometime prior. Across all types of PN programs an almost identical percentage of approximately 70% of all students had been employed immediately prior to entry into the practical nursing programs. There was a tendency for persons attending those schools having the highest dropout rate to classify themselves as housewives as compared to those schools which had the lowest dropout rate. The higher dropout rate schools showed that 16 to 17% of the students had been housewives immediately prior to entry while the schools with the lowest dropout rate showed 10.6% as housewives prior to entry. This difference is also related to a similar trend for the students in the higher dropout schools to be somewhat older, on average; students in the schools with the lowest dropout rates were younger.

22.8% of all enrolled students were employed part- or full-time while attending the PN program. Students who attended those schools with a 12.5% dropout rate or higher reported employment while in the PN program which was equivalent to the average for the total, over 20%. Only 13.6%

of those students in the 5 schools with the lowest dropout rate were employed while attending PN training; however, 31.4% of all students attending those schools with a 5.9 to 12.1% dropout rate were employed. However, when data were analyzed on a direct basis of employment and non-employment versus completion or dropping out, no significant relationships were found.

Size of Town Where Born and Size of Town At Last High School Attended

Prior studies have shown that persons from the farm and rural areas tended to have a higher rate of attendance in nursing education programs than persons who were from urban areas. Also, it is often assumed that guidance services are more adequate in larger communities and, therefore, students may have learned of practical nursing and entered such programs. To determine a measure of the mobility factor of students in practical nursing programs and relationships it may have to PN school completion, these variables were investigated. Table C.7 reports data concerning the size of the town where the enrolled students were born and the size of town where they last attended high school, compared by state, and whether or not they completed the PN program. 46.8% of all students were born on a farm or in a rural area of less than 2500 population while 38.9% last attended a high school in this type of community. Although most practical nursing programs were located in communities of 20,000 and over, approximately 34% of all students were born in such communities and 39% of the students last attended a high school in this size community. 30.9% of the Illinois students and 52.7% of the Iowa students last attended a school in a rural area or community of less than 2500. The general trend for students to move from smaller towns at the time of birth to a larger town for last high school attended is consistent across graduates and dropouts, and across the two states. No significant relationships or changes in percentages completing the PN program according to the size of town where they attended school is apparent. A limitation to this is that the cities of 100,000 and over tended to have a somewhat higher dropout rate. This finding is consistent with the dropout rate in the MDTA programs and H.S. Bd. programs which were located in the larger metropolitan areas and who enrolled a higher percentage of non-high school graduates and older students.

State Where Born and State Where Enrolled Student Last Attended High School

Earlier studies of all LPNs who had been licensed in each of Illinois and Iowa had shown mobility patterns from birth, high school attendance, PN school attendance and employment in later years. In Iowa, there had been a tendency for students to move from the rural areas to more urban areas within the state. A significant percentage of those who had completed the PN training and obtained their license in Iowa then took positions in other states. Most often this happened within the early years after completing PN training.

In Illinois, a significant in-migration had been noted. Over 25% of all currently licensed LPNs in 1966 had received their training outside of Illinois. A large migration of LPNs had occurred prior to PN training. A significant number of non-whites who had been born in the Southern States, as defined by the U.S. Census, had moved to Illinois, particularly to the Chicago metropolitan area, completed high school in Illinois and then obtained their PN training in the same metropolitan location. The great majority continued to be employed in the same city. Whites who had migrated from the Southern States were more likely to have completed high school in the Southern States and then migrated to locations in Illinois other than the Chicago metropolitan area, some prior to and many following PN preparation.

In analyzing data showing where each enrolled student was born and where they last attended high school a pattern similar to older LPNs remains evident. Based on known cases, 97 enrolled students had been born in the Southern States and an additional 79 had been born in "other" states. Within the states of Illinois and Iowa, several trends were noted. Somewhat surprisingly, the same number of students were born in Chicago as had last attended high school there, 185 students. Within the metropolitan area outside of the city of Chicago, 39 students had been born in the area while 83 had last attended high school there. Somewhat surprisingly 19% more students last attended high school in central, rural Illinois and 14% last attended high school in southern, rural Illinois than were born in those areas. This trend is contrary to a long-term established trend where the population in those two areas has been declining. A somewhat lower rate, but similar trend, was noted for northern, east central and southern rural Iowa; the gain there was lower, approximately 10%.

These data must be interpreted in light of the questions as they were asked. The two reference points in time were date of birth and last high school attended. A number of the students attended a PN school outside the area where they last attended high school. These data reflect the mobility between birth and high school and not from high school attendance to PN training.

276 of the total enrolled students, 26%, had been born in states other than Illinois and Iowa; 35% of whom had been born in the Southern States. 12%, 149, had last attended school in a state other than Illinois or Iowa; one-third had done so in the Southern States. The great majority of the total in-migration had been into the metropolitan areas of Illinois.

Primary Family of Enrolled Students

Table 3.7 shows the number of siblings of enrolled students by whether they were graduates or dropouts. The relative distribution of sizes of families between the graduates and the dropouts are fairly similar. There is some tendency for the dropouts to come from somewhat larger families. However, they are quite similar. 23.4% of all students came from small families, none or one sibling. 51.8% came from medium sized families, that is, two, three or four siblings; and, 24.8% came from large families, six or more. There is a tendency for the enrolled

TABLE 3.7: NUMBER OF SIBLINGS OF GRADUATES AND DROPOUTS

STATUS		NUMBER OF SIBLINGS None	1	2	3	4	5	6	7	8 or More	TOTAL
Grad.	N	61	183	230	184	147	86	56	35	77	1059
	%	5.8	17.3	21.7	17.4	13.9	8.1	5.3	3.3	7.2	100.0
DO.s	N	25	41	63	34	27	28	16	7	23	264
	%	9.5	15.5	23.9	12.9	10.2	10.6	6.1	2.6	8.7	100.0

students to come from families somewhat smaller than the licensed PNs in the two states as of 1966. LPNs in Illinois and Iowa as of 1966 came from: small families, 28.8%; medium sized families, 37%; and, large families, 34.2%. Enrolled students were more likely to have come from a medium sized family as opposed to a large family for the LPNs. Some of the lower percentage of students coming from a small family may be accounted for due to the young age group where additional siblings may yet be added to the family.

Educational Level of Parents

Approximately 87% of all graduates and 70% of the dropouts had completed high school. In comparison, approximately 31% of all parents had completed at least high school level education. Table 3.8 shows a more detailed breakdown of the educational achievement of the parents. Somewhat over 4% of the parents had completed college or above, while approximately 11 to 14% of the parents had at least some college attendance. The mothers of both the graduates and dropouts were somewhat more likely than the fathers to have attended college. Over all, the students have a higher educational level than their parents, and the mothers tend to have a somewhat higher educational attainment than the fathers. Both parents of the graduates have, on the average, a higher educational attainment than the parents of the dropouts. Conversely, a higher proportion of the parents of the dropouts tend to have low educational achievement, 8th grade or less. In the lower educational attainment levels, the fathers were significantly more likely to have low educational attainment than the mothers.

Occupations of Spouses and Parents

Data were obtained concerning the occupations of the parents and, in the case of married students, their spouse. The students reported the occupation of their parents at the time the enrolled student had completed high school. This was felt to be the most influential time for

TABLE 3.8: HIGHEST EDUCATIONAL ACHIEVEMENT OF THE PARENTS OF GRADUATES AND DROPOUTS

PARENT		HIGHEST EDUCATIONAL ACHIEVEMENT						
		Less than 8th Grade	Completed 8th Grade	Some H. S.	H. S. Grad.	Some College	College Grad. or Above	TOTAL
		GRADUATES						
Father	N	167	285	190	252	118	42	1054
	%	15.9	27.0	18.0	23.9	11.2	4.0	100.0
Mother	N	112	191	217	338	152	48	1058
	%	10.6	18.1	20.5	31.9	14.4	4.5	100.0
		DROP-OUTS						
Father	N	48	59	63	40	28	18	256
	%	18.8	23.1	24.6	15.6	10.9	7.0	100.0
Mother	N	43	50	69	54	34	11	261
	%	16.8	19.2	26.4	20.7	13.0	4.2	100.0

All totals and percentages are based on known cases.

the student in determining whether or not they might continue to post-high school education. Table C.8 gives the breakdown of spouse and parents by type of occupation for the graduates and the dropouts.

18.2% of all fathers were employed in the health related occupations. This compares to 15.8% of all mothers who were similarly employed. 23.3% of all fathers were farmers or employed on farms. By skill level,most were employed at the unskilled, semi-skilled or skilled level; respectively, these percentages are: 16.8%, 17.4%, 23.9%. An additional 14.5% were employed in semi-professional and technical occupations. Almost all unskilled fathers were employed in health related occupations. 66.6%, 842 persons, of all mothers were reported as housewives. Of those who were employed outside the home, 47.3% were employed in health related occupations; 27.3% in unskilled health related occupations. The distributions of the occupations of parents of the graduates and dropouts were quite similar in all categories whether health related or not.

As might be expected due to the younger age group and higher average educational levels, the spouses of the enrolled students had a higher occupational placement than the parents of enrolled students. Patterns of employment for the spouses of the graduates and dropouts were again quite similar. 20.4% of the spouses of graduates and 17.9% of the spouses of dropouts were employed in a health related occupation. Approximately three-fourths of the spouses employed in health related occupations were employed at the unskilled level. Approximately one-third of those employed in non-health related occupations were employed at the skilled level; the next highest classification was approximately 25% employed at the semi-skilled level. A significantly higher percentage of the spouses were employed at the professional level, in both the health and non-health occupations. 21.8% of the spouses of the dropouts were employed in non-health fields at the professional level while 11.5% of the spouses of graduates were similarly employed. The spouses of dropouts had a higher percentage of occupational placement at the professional level than did the spouses of graduates.

Non-White Students

138 of the total 1350 enrolled students were non-white. The great majority of all students classified in the non-white category were Negro although a few American Indians, Orientals and others were included in this group. In total there were approximately 12 "other than Negroes" in the group.

The dropout rate for the non-white group was significantly higher than for the white group. The dropout rate was approximately 22% for all enrolled students. The dropout rate for non-white students was 45.5%. The enrolled students in Iowa contained 11 non-white students; all graduated. In Illinois, the completion rate for whites was 75% and 53% for non-whites. 53% of all non-white students were enrolled in MDTA programs and an additional 35.6% were enrolled in the H.S. Bd. programs; 122 of the 138 non-whites were enrolled in these two types of programs. The majority of all non-whites were enrolled in the programs located within the city of Chicago. 76 of the 229 students enrolled in those five programs having the highest dropout rates were non-white. At

the other extreme there were no non-white students enrolled in those five programs that had the lowest dropout rate. The schools in the intermediate three dropout rate categories contained approximately 5% non-white students in each category.

The non-white students were distributed across all nine age categories with the greatest concentration of students being in the 20-24 age group, 28.3%. 24.6% were in the 25-29 age group and 18% were in the 35-39 age group. The highest PN school completion rate was achieved by the 25-29 age group at 70.6%, the 50-54 and the over 55 age groups each had a completion rate of 66.7%. The 18-19 age group contained proportionately fewer non-whites. Also, fewer of the non-white students entered PN training directly after graduating from high school.

Of the non-whites, 31.9% were single, 36.2% were married, and 29% were separated, widowed, or divorced. A significantly greater proportion of the non-whites were in the head of household category; approximately 10% of the white students were in this category. The married, non-white students had the highest completion rate of any marital group with 68%; next was the head of household group with 57.5% completion; and, the single students had a completion rate of 47.7%. In those schools with the highest dropout rate, 17.9% of the non-white students were in the head of household category while 9.5% were in this category for those schools having the next to the lowest dropout rate.

Since a high percentage of the non-whites dropped out early in the programs, data collected at the school testing sessions were less likely to be complete. The following data are based on known cases. An analysis of the number of children under school age and number of children in kindergraden through 6th grade showed: 57.2% had no children under school age; 36.2% had one or more children under school age; the remaining 5.6% were unknown. 56.5% had no children in grades K-6; 36.9% had one or more children in grade K-6. 36.9% had no children in either category; 3.6% were unknown; and, the remaining 59.5% had one or more children either less than kindergarden age or in kindergarden through 6th grade.

An analysis of the total number of children living at home showed 29% with no children at home, 67.4% showed one or more children at home and 3.6% unknown. The percentage of non-whites who had children living at home is noticeably higher than for the white group or for the U.S. population in general. This finding relates to the finding that the high percentage in the head of household group had dependent children in the home. However, in the non-white group, both the married and head of household groups had a higher completion rate than the single students.

Based on known cases 73.1%, 116 of the 138, of the non-white graduates had completed 12th grade or its equivalent while 65.1% of the dropouts had an equivalent education. In total, 85 of the 116 known cases had completed the 12th grade or its equivalent.

An analysis of the primary and secondary sources of financial support while attending the PN program was made. 37% indicated their primary source of support was from MDTA funds; 34.8% indicated a spouse or relative as being the primary source. 10% reported current earnings as the primary source of support. 45, or 32.6%, of the 138 reported the MDTA as a secondary source of support. 31 persons reported the MDTA as both the primary and secondary source. 21.7% of the group reported spouse or

relative as a secondary source of support. 15.2% indicated no secondary source of support. Approximately 10% reported public aid funds as being the primary source of support and an equivalent percent reported public aid as being a secondary source of support.

An analysis of employment immediately prior to and during PN training showed that 22.5% were employed both immediately prior to and during PN training. 45.6% of the total were employed immediately prior to entering PN training but were not employed during their training. A total of 23.2% were working either full or part-time during their PN training. This rate is approximately the same as for the white students.

51.4% of all non-white students had some prior health occupations experience as an aide or "unlicensed PN." Of this group, 62% completed the PN program. In total only 11.6% indicated no prior health experience when entering the PN program. Of the five students who had indicated experience as a candy striper, 2 graduated. Of the 7 students who indicated they had been employed in a "home health experience" 5 completed the PN program.

Summary

10.2% of the enrolled students were non-white. The great majority of all non-white students attended schools in Illinois and most of those in the city of Chicago. The typical student was more likely to have been employed in a health related activity after high school and to have entered the PN program some years after attending high school. They were also more likely to be in their early 20's than the white students. The primary sources of support were from MDTA and public aid funds with secondary assistance from a spouse or relative. Almost 70% were not working during the time they were attending PN training, but current earnings were reported as a primary source of support by 10%. In total, 75.2% were, or had been, married; approximately one-half of these were married at the time of attendance while the other half were in head of household category. A higher percentage of the non-white students were in the head of household category and had a larger number of children and children in the home than the white students. Non-white students were less likely to have completed the 12th grade or its equivalent. The married non-white students were most likely to complete the PN program while the single students were the least likely.

Male Students

29 males were included in the enrolled students, 2.1%. This sample size is considered to be too small for any extensive interpretations or projections. However, analyses were made of their background data. 28 were white and one was non-white. 22, 75.9%, graduated from the program. Male students were included in the age ranges from 18-19 through 45-49. The median group was in the 20-24 age category with 10 males. 16 or 55.2% of the male students were single; 11 were married. The married students had the highest completion rate with 10 of the 11 graduating. 12 of the 16 single men graduated.

26 of the 29, 89.7%, reported that they were working immediately

prior to entering PN training. 19 of the 29 reported that they were employed during PN training. Two students reported that they were not working immediately prior to enrollment but were "now working" during PN training. 21 of the 29 had been employed in a prior health occupation as an aide or "unlicensed PN."

19 of the 29 males had completed high school or the equivalent. Data were missing for 18 cases to determine high school class rank. 6 students, where the information was available, indicated they were in the lower quarter of their class.

The male students were included in all types of schools. Two were attending school in the "Other" category while 9 were enrolled in MDTA programs. No male students dropped out at the Area Voc. programs or the Junior College programs while 50% dropped out in the "Other" school categories. In general, these ratios are similar to the entire enrolled student population at those schools.

The primary source of support for the males while they were attending PN school showed that the most important sources were; current earnings in 10 cases, MDTA in 9 cases, and a spouse or relative in 5 cases. Secondary sources of support showed the most important to be current earnings with 10, spouse or relative 6, and prior savings, 4.

Summary

A total of 3146 persons applied to the 45 cooperating schools; 1350 students were actually enrolled in the criterion class for a percentage of 42.9. 1056 of these 1350 students completed the requirements of their PN program on schedule with the criterion class. The dropout rate across the total was 21.8%; Illinois had a rate of 28.2% while Iowa had a rate of 10.4%. The definitions of graduate and dropout used in this study maximized the dropout rate; any student who was enrolled for at least one day was included as an enrolled students, and any student who may have "dropped back" to a following class or who did not complete on schedule was classified as a dropout.

The majority of students were young, 18-19 years of age, 27.3%; and, an additional 33.9% were 20-24 years of age. 48.2% of all enrolled students were single, 29.1% were married and 11.0% were widowed, separated or divorced. Students enrolled in the H.S. Bd. and MDTA programs were more likely to be older, married, and non-white. These types of schools also had a higher dropout rate.

10.2% of all students were non-white. The majority of the non-white students were enrolled in programs located in large metropolitan areas in Illinois. Among this group, most had had prior employment in the health occupations area as unskilled employees. Proportionately, they had a lower percentage of high school completion prior to entry into a PN program. The major sources of financial support while attending PN programs were from the MDTA and public aid funds. They were more likely to be married and particularly to be heads of households than the white students. Most often, they had worked for some time following last high school attendance and before PN program entry. In addition, they were more likely to have children in the home while attending the PN school. The combinations of these factors most likely contributed to

the dropout rate of 45.5%. The married and head of household non-white students had a higher completion rate than the single non-white students.

A total of 29 males were included in the 1350 enrolled students, 2.1%. Although this sample is too small to make extensive interpretations or predictions, the following characteristics were found. 10 of the males were in the age group of 20-24. Somewhat over half of all male students were single. The great majority were working immediately prior to entering the PN program with 21 of the 29 having been employed in a health occupation as an aide or an orderly prior to attending PN school. Two-thirds of the males had completed high school. Three-fourths of all males completed the PN program. Approximately one-third obtained their source of support from MDTA funds and another third from personal earnings while attending PN school.

In making the decision to attend a PN school the majority of all enrolled students had made the decision within the year prior to entry; most within 6 months. The generalized "desire to help others" was the most common reason given for choosing practical nursing. Approximately one-half of the students first discussed entering practical nursing with their parents or a friend. 10.4% had first discussed this possibility with a teacher or counselor; less than 3% had first discussed it with a representative of the state employment service. Of those whose "friends" were employed in the health field, most were co-workers, more often an RN or LPN.

There was a shift in reference persons from first discussion to most influential person in making the decision to enter PN training. The general basis of the shift was from parents and friends to persons employed in the health occupations field. RNs and LPNs each accounted for approximately 20% as the most influential person in the student's decision. Co-workers provided the basis of contact in somewhat under one-half of all cases.

Prior educational backgrounds and records were investigated for relationships with completion of the PN program. The great majority of all students, 83.2%, had graduated from high school or had its equivalent through GED exam or correspondence courses. A significant relationship was found between the highest grade completed and likelihood of completing the practical nursing program. GPAs and rank in class were also related to whether or not students completed the program. Grades received in English, math, science and the practical arts by graduates were higher but the number of semesters taken in each area by the graduates and dropouts did not differ significantly. Students with less than high school completion were more likely to be enrolled in H.S. Bd. or in MDTA programs located in large metropolitan areas of Illinois. A great majority of all students had ranked in the second or third quartile of their high school class, slightly more in the third quartile.

Approximately one-half of all students had attended a college preparatory curriculum while the other half had attended a general curriculum. This would indicate that the PN programs draw students in a higher than proportionate percentage from those who followed a general curriculum in high school. However, those who had attended a college prep curriculum had a somewhat high completion rate.

The mean age of all students was approximately 27 years; the median age was 21.5 years. Approximately 62% of all enrolled students were

under 25 years of age. The dropout rates by age group were relatively similar, approximately 20%, with the exception that the 35-39 age group had a somewhat higher rate, 25.5%. Also the 50-54 age group had a dropout rate of 37.5%; a very small number of students in this age group may give a distorted picture since those 55 years of age and above had a completion rate of almost 80%.

59.3% of all students were single; 29.6% were married; and, 11.1% were heads of households. Each of the single and married groups had a completion rate of slightly over 70%.

35% of all enrolled students had some additional, formal education experience beyond high school. The most common type of other education was in private business schools. Approximately 5% had some prior attendance in an RN and PN program. 49 students had attended a nurses aide program.

Approximately 28% of all students indicated that they were primarily self-supporting while attending the PN program and approximately one-fourth of all students reported that they also provided the primary source of support for one or more other dependents. Those who reported that they were self-supporting had approximately a 5% lower completion rate than those who were not providing their own support. Those who had young children in the home also had a somewhat lower, approximately 7%, completion rate than those without children in the home.

Across all types of PN programs, approximately 70% of all students had been employed immediately prior to entry into the practical nursing program. Those persons who classified themselves as housewives prior to entry into the practical nursing program had a somewhat lower completion rate than those who were employed in out-of-the-home jobs. 22.8% of all enrolled students were employed part- or full-time while attending the PN program. No relationship was found for the number of students employed and those schools having high dropout rates and low dropout rates. Some minor differences were noted, although they were not significantly different.

There were two types of geographic mobility noted. A larger than expected percentage of all students had been born on a farm or in a community of less than 2500. The tendency was then to move to a larger community for their last high school attendance prior to PN training. The size of the town at birth and at last high school attendance was not significantly related to completion of the PN program. There was a marked tendency for students to have been born in states other than Illinois and Iowa, attend high school in that state and finally enter a PN program within the two states. The largest mobility was from the Southern States to Illinois prior to PN school attendance. This pattern is consistent with that found for all Illinois LPNs in 1966. Contrary to the patterns of the total populations of the two states, there was a tendency for the PN students to have migrated to the rural areas of the two states for high school attendance. Some of this migration was from other states or from other parts of the two reference states.

As might be expected, the enrolled students came from somewhat smaller families than did all LPNs in Illinois and Iowa in 1966. The trend to smaller families is reflected by this group. However, they came from families that were somewhat larger than that for the U.S. population. The educational level of the parents of the enrolled students

was significantly lower than the students themselves; approximately 31% of all parents had completed at least high school level education. The educational level of the parents of the dropouts was lower than the educational level of the graduates.

By occupation, the parents were likely to be employed at the unskilled, semi-skilled or skilled level, approximately 56%. Almost half of the parents of the enrolled students had been employed in health related occuaptions, more often at the unskilled or semi-skilled levels. A higher than expected percentage of the spouses of both the graduates and dropouts were employed in health related occupations.

The graduate of the PN programs was more likely to be a young, single, female who had completed high school in the college preparatory curriculum in the year prior to entering the PN program. The dropout was more likely to be a female who was somewhat older, had been employed in the health occupations prior to PN school entry, have a lower educational level and achieve somewhat lower in both GPA and number of years of education. She was also more likely to be married and have children in the home and attend a program operated by a H.S. Bd. or the MDTA in a large metropolitan center. However, students with characteristics similar to the dropout described above were able to successfully complete the PN program in the majority, over two-thirds, of the cases. Students with these characteristics would likely not have been admitted to a number of the programs included within this study. Inspection of the applicant and enrolled student data indicated that where there was a large pool of applicants, the "better" students were selected for admission. Where such conditions existed, the completion rate was over 85%.

These findings would indicate that a group of potentially successful PN program graduates exists, particularly in larger metropolitan centers. A sizable proportion of this group would be denied admission to some of the PN programs included in this study. When admitted to other PN programs they will have a higher dropout rate, but approximately two-thirds will successfully complete the program. It is possible that remedial or refresher education activities prior to the PN program could increase the completion rate. However, direct evidence on this possibility is not available in this study.

CHAPTER IV

ABILITY, INTERESTS AND ACHIEVEMENT OF ENROLLED STUDENTS

Data utilized in the analyses included in this Chapter were drawn from all data collection sessions and activities across the entire Study. Appendix A may be referred to for a summary of the data collection sequence and schedule; included in the schedule is the title of all instruments utilized.

In summary: 1) the faculties of the various schools obtained data during the application process; 2) data of record from individual student folders were available to the Project staff and collected by the Project staff; 3) three on-site data collection sessions were conducted by the Project staff; and, 4) a follow-up questionnaire was sent to all graduates after completion. A follow-up questionnaire was sent to all dropouts. In addition, the faculty members completed evaluation instruments during the on-site visits as well as other insturments upon request.

Data in this Chapter are reported for both the graduate and dropout enrolled students. However, since a great majority of all dropouts did so during the early weeks of their programs, in-school achievement data for the dropouts are limited. A later Chapter is devoted to information concerning the dropouts as a group.

Data and findings in this Chapter are based on: 1) standardized instruments for measuring ability, aptitude, achievement (and combinations of each); 2) interests and maturity; 3) prior educational achievement in high school as reflected by Grade Point Averages (GPA) and Rank in Class (RIC); 4) PN program achievements as measured by standardized instruments and by the faculty; 5) end of program achievement as measured by the State Board Licensure Exam (SBL); and, 6) job satisfaction in employment after graduation (JS). Selected personal and family characteristics as well as prior employment experiences are included in some analyses.

Product-moment correlation statistics, Pearson-r, were used to determine the relationships among many of the variables. The degree of relationships between two variables or measures is determined by the correlation coefficient, an index which may vary from 1.00 to -1.00. A correlation of 1.00 would indicate that the person with the highest score on one measure also had the highest score on the other measure with which it is being correlated, and that each of the persons who took both of the tests (or had a score on each measure) achieved the same rank in each group, that is, perfect correlation. By knowing the score on one measure, you could predict accurately the score the person would achieve on the other measure. A correlation of -1.00 is a perfect negative correlation, in which the highest of a group on one measure is the lowest of the group on the other measure, and all persons who took both tests are in exactly reverse order on the two measures. When no relationship exists at all, the correlation is 0.00 or, by chance of small magnitude, either positive or negative. This means that a person scoring high on one measure is just as likely to be high, medium or low on the other measure. An example might be the correlation between adult height and ability to drive an auto. It is very likely that some tall people will be able to

drive well and others poorly; similarly, some short people will drive well and others poorly; etc. If high, and significant, relationship could be found between selection instruments and success in PN programs then the selection process could be significantly improved for the benefit of all concerned.

Several factors may operate to reduce the size of the correlation coefficient. Included are: a restricted range of scores, individual factors or conditions affecting the person taking the test, errors in the scoring procedure, poor reliability of the test insturments, etc. Generally, a great deal of additional confidence can be placed in a coefficient determined from a large number of cases than from a small number of cases.

Table D.1 reports the inter-correlation matrix, means and standard deviations for 61 selected variables. A missing-data correlation program was utilized to determine the Pearson-r correlation. The N reported in Table D.1 represents the smallest N of either variable determining the index. Since a missing-data correlation program was utilized, the actual N for each correlation may vary somewhat. However, since data were available for approximately 1,000 cases, with the exception of the General Aptitude Test Battery (GATB), the sample was considered to be sufficiently large that a slight variation in N would not have significant influence on the reported correlation. When the sample size equals 1,000, the Pearson-r is significant at the .01 level with a value of .08. Since the N in the table for graduates approximates 1000 persons in most cases, a high proportion of all correlations are statistically significant beyond the .01 level. However, the magnitude of the correlation must be given primary attention. The relationship may be "statistically significant" but be of such low magnitude that caution should be exercised in making educational decisions. If the cost in money and effort is relatively small then it is generally desirable to give recognition to the correlations of lower magnitude to take advantage of even the small relationships shown. However, large economic or educational decisions probably should not be made as a result of correlations having a relatively small magnitude unless other factors also support this decision.

Table D.2 reports an inter-correlation matrix for 34 of the 61 selected variables based on the data for the dropouts. Means and standard deviations are also reported for each of these variables. The majority of all variables in this Table are those which were completed as a part of the selection process since many left the program before the in-school data could be obtained.

All means for the dropouts and the graduates could have been compared for statistical significance. However, a similar situation exists with the means as was cited above for the correlations. That is, with the large sample size, a relatively small numerical difference in means was found to be statistically significant. A similar interpretation of the difference in means, as cited for correlations, should be utilized. That is, even though the difference between means was significant in most cases, the magnitude of the difference is such that it should be interpreted with caution when making educational decisions.

As a general pattern, the mean of each score for the dropouts was lower than the comparable mean for the graduates. Additionally, the

standard deviations of each measure is typically larger for the dropouts. Across most sub-scores of the general aptitude and ability measures, the correlations are larger for the dropouts than for the graduates. This is especially true for the Dailey tests, PACE,GATB and the high school achievement measures. Correlations among the high school achievement measures and the PACE sub-scores are typically from .43 to .73 for the dropouts. These are almost twice as large as for the graduates.

A part of this higher correlation can be accounted for due to the increased range of scores on each measure for the dropouts. Included in the dropouts are persons who dropped out for all reasons. Since the most common reason given for dropping out of the program was academic problems, more of the very low scores on the ability measures were included in the dropout group. On the other hand, a number of persons with high scores were either forced to dropout for other than academic reasons or chose to leave the PN program. These reasons included family problems, finances and other. The higher correlations for the dropouts would also indicate that the various general ability and multifactor tests are measuring the same, or a similar, common ability. The lower scoring students apparently tended to use a higher reliance on a "general ability" while students who scored higher on the various tests had the general ability to a greater extent plus other experiences and abilities which were measured by the differential aspects of the multifactor tests.

Ability and Aptitude Measures

Four standardized instruments often used as instruments for selection of PN students were used in this Study. They were: the Dailey Vocational Guidance Test Battery (DVG), the Otis Gamma Form EM Test of Mental Ability (OTIS), the Pre-Admission and Classification Examination (PACE) and the General Aptitude Test Battery (GATB). The PACE and OTIS were furnished to and administered by the faculties of the PN programs as a part of their admission procedures. In most cases, the PN program scored the OTIS and provided the results, raw score, to the Project. PACE was scored by the publisher, the National League for Nursing. The results of this examination were provided to each school and the Project office. The Dailey Vocational Guidance Test Battery, DVG, was administered by the Project staff during their first on-site visit, within the first two months of the class. The GATB has been developed and standardized by the U.S. Employment Service and is utilized by all state employment service agencies as their primary selection and placement instrument. The results of this examination are available only on a limited number of cases in this Study and were provided by the state employment services upon authorization of the federal agency.

The Dailey Vocational Guidance Test Battery

The manual for this test states that they "....are designed to measure the potential of young people for a wide range of occupations." They are intended to be used for the purpose of guidance, evaluation, training and placement in school or in industry. Each of the tests in this battery includes both aptitude and achievement items "....designed

TABLE 4.1: MEANS AND STANDARD DEVIATIONS FOR GRADUATES AND DROPOUTS BY SELECTED INSTRUMENTS

	GRADUATES			DROPOUTS		
INSTRUMENT	Mean	St'd Dev.	Approx.N	Mean	St'd Dev.	Approx.N
TST						
Sci.	6.5	2.4	1049	5.5	2.4	264
Arith.	18.2	4.9	1051	15.5	5.7	264
Voc.	19.1	4.7	1051	17.2	5.3	264
Elect.	24.9	7.2	1051	22.3	6.5	264
Mech.	29.3	7.3	1051	25.8	8.1	264
Schol.	42.3	9.3	1051	36.4	10.6	264
TST-Total	67.2	14.8	1051	58.7	15.6	264
SVT-Total	15.5	6.2	1049	12.7	6.3	264
BET-Total	81.6	11.2	1050	75.7	13.3	264
OTIS-Total	105.3	9.9	1027	100.0	10.9	270
GATB						
Spatial	99.4	16.5	305	96.0	20.8	60
Verbal	106.1	12.1	389	102.5	13.2	126
Numeral	100.9	13.9	150	96.0	15.6	46
Gen. Int.	103.2	12.6	390	99.0	15.8	126
Mot. Coor.	110.7	15.8	386	110.1	17.2	126
Mech.	113.2	14.6	386	114.1	18.1	126
GPA (est)	2.5	0.6	1046	2.4	0.7	264
GPA (files)	2.4	0.7	846	2.0	0.7	168
H.S.RK.(est)	2.7	0.7	1046	2.5	0.8	267
H.S.RK.(files)	2.4	0.9	655	2.0	0.9	130
CRITES-Tot.	40.1	3.7	1023	38.8	3.6	132
MV II						
Fd. Serv.	49.1	6.4	1028	48.2	6.9	134
Ret.Sal. Clk	54.5	2.5	1028	53.8	5.4	134
Stock Clk.	59.7	6.5	1028	59.4	6.2	134
Tab.Mach.Op.	42.3	5.4	1028	43.1	5.4	134
Hosp. Att.	55.7	4.3	1028	54.6	5.4	134

TABLE 4.1: MEANS AND STANDARD DEVIATIONS FOR GRADUATES AND DROPOUTS BY SELECTED INSTURMENTS

	GRADUATES			DROPOUTS		
INSTRUMENT	Mean	St'd Dev.	Approx.N	Mean	St'd Dev.	Approx.N
MV II Cont'd						
Plast.	27.5	6.7	1028	28.6	6.3	134
Mech.	25.6	3.5	1028	25.9	3.5	134
Health	77.9	6.4	1028	75.5	8.5	134
Office	59.6	10.4	1028	60.9	10.9	134
Electronics	32.5	4.8	1028	32.7	4.3	134
Fd. Serv.	66.0	9.7	1028	63.8	10.7	134
Carpentry	43.3	6.9	1028	42.6	7.2	134
Sal.s-Off.	67.3	9.4	1028	67.6	10.6	134
Clean Hnds	56.7	9.4	1028	58.4	10.5	134
Outdoors	32.7	7.8	1028	32.0	8.1	134
PACE						
Compos.	113.1	14.7	1026	104.4	17.5	270
Sci.&Hea.	37.9	7.1	1026	34.6	7.2	274
Gen. Inf.	40.9	6.5	1026	37.5	8.4	274
Arith.	21.9	4.8	1026	19.2	5.9	274
GI & Jud T.	100.7	15.8	1026	91.4	18.8	274
Vocab.	37.4	7.3	1026	34.4	8.2	274
Read.	31.2	6.4	1026	28.0	1.0	274
V & R-Tot.	68.6	12.7	1026	62.5	14.2	274

to predict both training and occupational success in a number of skilled trades and technical occupations."

There are three major sub-tests within the battery: the Business English Test (previously known as the Secretarial English Test) BET, Spatial Visualization Test (SVT), and the Technical and Scholastic Test (TST).

Technical and Scholastic Test, TST. The TST is designed to test the examinee in three ways: (1) to measure knowledge of electrical and mechanical equipment, (2) to measure knowledge of physical sciences, and (3) to indicate general scholastic ability. Included in the total TST are seven sub-tests: (1) physical sciences, 15 items; (2) arithmetic reasoning, 30 items; (3) electronics, 15 items; (4) electricity, 15 items; (5) mechanical information, 30 items; (6) elementary algebra, 15 items; (7) vocabulary, 30 items. A total of 150 items are included in the battery. The TST provides scores for each sub-test and a total.

Several sets of norms are reported by the publisher, Houghton - Mifflin Co. The 12th grade norms for females were utilized for comparison in this Study. Although the enrolled student population included many persons who were considerably older than 12th grade students and students who had not completed the 12th grade, the 12th grade norms were considered to be the most nearly appropriate. The graduates scored higher, by comparison of means, than the dropouts on all sub-tests and the total. The means for the graduates were above the means for the 12th grade norms for physical science, vocabulary, electrical, mechanical and total. The means for the graduates were slightly below the 12th grade norm means for the arithmetic reasoning and the scholastic subtests. The means for dropouts were below the norm mean for all subtests and the total.

Scores on the TST sub-tests and total were correlated with other variables. Correlations with high school rank in class and GPA variables were generally in the range of .15 through .30. Relationship of the TST total with other verbally oriented general intelligence type of measures such as the GATB general intelligence and PACE general information total were .68 to .70. The OTIS and verbal measures showed correlations in the .40 to .58 range. Correlations with the PACE and its various sub-tests were generally in the range of .48 through .70; the PACE composite and general information total were highest and reading the lowest. Correlations with achievement in the nursing areas of the practical nursing program were usually in the range of .11 through .19. PN classroom achievement was correlated at the level of .20 to .22 while there was very little relationship with achievement on patient relationships and clinical performance. Essentially no relationships were found between the TST scores and the Minnesota Vocational Interest Inventory (MVII) scores. Correlations for the TUC, NIP and state board licensure exam (SBL) scores were generally in the range of .15 through .25. Essentially no relationships were found among the job satisfaction scores and the TST total and sub-tests. In general, the sub-tests of the TST showed high inter-correlations with each other, next highest correlations were with the PACE totals and sub-tests, next highest with the GATB totals and sub-tests, about the same relationships with the NIP and TUC tests as with prior high school grades and lower relationships with achievement grades within the practical nursing program.

A t-test of means between graduates and dropouts showed the graduates to have scored significantly higher than the dropouts on practically all tests and sub-tests; however, the differences in means are sufficiently large to be meaningful for only the TST scholastic and total.

The Business English Test (BET) The BET is designed to gain a measure of the testee's knowledge of spelling, grammar, punctuation, and capitalization. It is intended to be used to assess skills of persons desiring to go into secretarial and business occupations at the skilled worker level. This test has 111 items and a 30-minute time limit. The mean scores for each of the graduate and dropout groups were below the 12th grade female norms as reported by the publisher. Graduates scored a mean of 81.6 with a standard deviation of 11.2, while the dropouts scored 75.5 with a standard deviation of 13.3. This difference was statistically significant.

The BET showed the highest correlation with the OTIS; verbal, numerical and general intelligence of the GATB; and the PACE composite score. Each of these correlations were in the range of .52 through .58. The remaining sub-scores of the PACE correlated with the BET in the range of .36 through .48. Other correlations included: clinical performance, .10; classroom achievement, .17; obstetrics, .20; pediatrics, .18; medical-surgical, .20; and, basic nursing, .19. Correlations with the subtest and total scores of the NIP and TUC were in the range of .10 to .15. A correlation of .11 was found with SBL scores. Correlations with high school rank and GPAs were in the range of .20 to .30. The highest correlation for the GPAs was with the English GPA, .30. As might be expected, the BET shows higher correlations with other cognitive measures of general ability, particulary those requiring a similar English and grammar component or high verbal orientation, .47 to .52. There is a low relationship of the BET with measures of the in-PN school achievement when measured by both standardized tests and teacher developed instruments, .20, and lower. Essentially no relationships were found with job satisfaction socres.

Spatial Visualization Test (SVT) The SVT measures ability to visualize objects presented in two dimensional drawings to represent three dimensional objects. The test contains 30 items and has a 20 minute time limitation. The test manual proposes that the type of ability measured by this instrument is important in occupations such as design, drafting and architecture. Only norms for males are presented. The SVT norm mean for 12th grade males is 19.0 with a standard deviation of 6.99. The graduates scored a mean of 15.2 with a standard deviation of 6.3. Both graduate and dropout means were below the 12th grade norms for males.

The SVT was included in the battery of tests for this Study for two reasons: (1) to assist in establishing norms for the female population and the practical nursing group in particular, and, (2) under the assumption that a degree of spatial visualization may be required in learning the anatomy, physiology and other areas which are presented through pictorial and other two dimensional means.

The highest correlation for the SVT was with the spatial sub-test of the GATB, .57. The second highest commonality with the SVT appeared to be other measures of general intelligence. It correlated .41 with the OTIS, .47 with the GATB general intelligence, .39 with the PACE arithmetic and .34 with the PACE general information total. With the faculty

grades for basic nursing it correlated .14; .19 with the TUC body structure sub-score; .21 with the TUC basic nursing sub-score; and, .16 with the NIP total score. A -.20 correlation was found with age. The range of correlations with the PACE and its sub-scores was from .20 to .39.

The higher correlations of the SVT are, in general, with measures of general intelligence and those sub-tests closely related to general intelligence. This finding plus the finding which shows that the graduates score higher than dropouts on this test would lend support to the idea that each are measuring a common factor of general intelligence. It is quite doubtful if this test adds significantly to information gained from other instruments which are also most highly related to achievement in practical nursing. It may be that the norms on this test when compared with norms for students in other specialty areas could help to provide differentiations for student selection. However, the differences are too small in this study to justify a strong recommendation on this question.

General Aptitude Test Battery (GATB)

The GATB has been developed and standardized by the U.S. Employment Service and utilized by the State Employment Services for counselling, occupational placement and as a basis for recommendation to MDTA training programs. Included in the GATB are twelve sub-tests which yield individual scores; combinations of the individual sub-tests are used to determine additional measures. Standardization and validation of various combinations of the sub-tests have been developed by the U.S. Employment Service for various occupations. Each of the combinations of sub-tests comprise a specific test for an occupational group and carries its own designation number. The GATB format of scores used in this study were given the number PT-1002. It is similar to earlier GATB formats for practical nursing which were designated B-1001 and B-1002.

Seven scores from the GATB are reported in this Study. Some are individual sub-test scores and others are scores from a combination of sub-tests: spatial, verbal, motor corrdination, mechanical, numerical (includes arithmetic reasoning and computation), and general intelligence (includes spatial, verbal and arithmetic reasoning).

Standard scores and norms have been derived for practical nursing on this test battery. Typically the mean is determined to be 100 with a standard deviation of 20. A standard score of 90 is typically used as the cut-off for selection and recommendation to practical nursing programs based on the norms for practical nursing. Technical report B-547 of the U.S.E.S., June 1963, reports standardization and cross-validation data for this test. This technical report is based on a validation sample of 119 cases in Michigan and a cross-validation sample of 111 cases in Minnesota to establish the PN occupational norms. Comparisons were made of scores achieved on the PACE, high school GPAs and success in the PN programs and on the SBL.

In the validation study in Michigan, a Pearson-r of -.059 was found between age in years and PN classroom GPA and a correlation of .153 between PN classroom GPA and years of education. SBL scores and age in years correlated at .184 while SBL and years of education had a correlation of -.133. The general intelligence score of the GATB and PN classroom GPA correlated at .195 and with the SBL socre at .170. The verbal GATB score had a Pearson-r of .210 with PN classroom GPA and .252 with

SBL scores. Other correlations based on the 119 cases were not significant at the .05 level. A Pearson-r of .50 was found between PN classroom GPA and clinical performance; a Pearson-r of .42 between PN classroom GPA and the SBL score; and, a Pearson-r of .11 between PN classroom GPA and clinical performance.

Based on these and later validation and cross-validation studies, a multiple cut-off exam pattern was established for selection of practical nursing trainees who were referred to MDTA supported programs.

The GATB scores for subjects in this Study were provided through the state employment services offices. The various sub-scores and total scores were available on from 250 to 500 cases. The means reported in Tables D.1 and D.2 are based on the norm scores of 100 as the means. It must be kept in mind that the cases upon which the GATB data are based were those students referred by the state employment services and generally eligible for support from those funds. Typically, potential students meeting these requirements had lower educational background, were somewhat older and showed a higher dropout rate. The reported means for the GATB should not be interpreted as representative of the total enrolled student population.

David Pucel and Howard F. Nelson, of the University of Minnesota, Industrial Education Department, in a report on their Project Mini-Score, U.S.O.E. Project No. HRD 5-0148, report norms for graduates of Minnesota PN programs on the GATB (Form 1002-B). Their norms are based on approximately 250 cases. They report the following approximate means: intelligence, 112; verbal, 108; numerical, 111; spatial, 114; form perception, 126; clerical, 125; and motor, 113. The above means are significantly higher than the enrolled students for whom GATB scores were available in this Study.

In comparing the graduates and dropouts in this Study, the dropouts scored means of 96 to 114 on the various sub-tests. The graduates as a group had a higher mean than the dropouts on each sub-test with the exception of the mechanical. Means for the graduates were: spatial, 99.2; verbal, 106.1; numerical, 100.1; general intelligence, 103.2; motor coordination, 110.1; and, mechanical, 113.2.

The spatial sub-test of the GATB showed the highest correlation, .69, with the numerical sub-test of the GATB; next highest was with the SVT of the Dailey Battery. Correlations of the spatial were .33 to .41 with the other sub-tests of the Dailey with the exception of the Dailey vocabulary sub-test which was .14.

The correlations would indicate a low common measure between the sub-tests of the GATB and the Dailey scores with the exception of those items where vocabulary is a strong factor. The verbal sub-test of the GATB achieved a correlation of .62 to .65 with other verbal and scholastic measures of the Dailey. Similar high correlations, .57 to .68, were found with the sub-tests of the PACE and GATB.

The numerical sub-testof the GATB correlated at .64 with the arithmetic sub-score of the PACE; .48 with the mechanical sub-test of the GATB and .46 with the general information total of the PACE. In general, the GATB verbal sub-test correlated .30 to .38 with the grades given in the various areas of the PN program with the exception of the geriatrics. A correlation of .13 was found between the SBL scores and the GATB verbal score. In general, the correlations of the GATB verbal sub-test score

ranged from .55 through .68 for the PACE sub-tests with the exception of the arithmetic sub-score where the correlation was .34. Correlations of the GATB verbal with the NIP and TUC were approximately .10.

In many respects, the correlations of the verbal, numerical and general intelligence sub-scores of the GATB were similar. That is, the correlations were in a range of .35 through .70 with other measures of general intelligence and verbal abilities on other standardized measures. With the exception of the spatial test, the other GATB sub-tests correlated in the range of approximately .15 through .25 for GPAs in high school. The spatial showed generally lower correlations. The motor coordination score showed correlations from approximately .20 to .30 for high school GPAs. There were low relationships between the motor coordination scores and the grades given in practical nursing schools since these correlations were in the range of .10 to .15. The mechanical sub-test of the GATB showed correlations in the range of .15 to .25 with the various sub- and total scores of the PACE. Essentially no significant relationships were found among the total or sub-test scores of the GATB and the Minnesota Vocational Interest Inventory.

In summary, the numerical, general intelligence and verbal sub-scores of the GATB show the higher correlations, .40 to .70 with other standardized test measures of similar abilities. The motor coordination and mechanical sub-scores have low relationships with achievement in the various areas of the practical nursing programs, .15 to .25. Verbal and general intelligence GATB scores correlate from .25 to .38 with GPAs in the PN program. These correlations also have a common measurement with other measures of general ability, particularly verbal ability. Although motor coordination and mechanical aspects would appear to be involved in success in practical nursing, correlations are generally low, .04 to .07 for clinical performance and SBL. The correlations of the various sub-scores have low correlations with success on the SBL. The highest correlation, .13, was with the verbal sub-test. Essentially no relationships were found with job satisfaction or interest measures, MVII. Additionally, although all students admitted through the state employment service on the basis of their GATB scores exceeded the norms as established by the state employment service, approximately one-fourth of the students failed to complete the program. This is approximately the same percentage of dropouts as for the entire enrolled student population. There is some relationship between the scores on the GATB and completion of the program, however, it would appear that other factors may be more important than the scores on the GATB battery. Also, the potential students who were rejected on the basis of their GATB scores may have had a much higher dropout rate if they had been admitted.

OTIS Test of Mental Ability

The OTIS Quick-Scoring Test of Mental Ability is designed to provide a quick, 15 minute, measure of general mental ability for different age groups. The Gamma Form F M of the OTIS, used in this Study, was developed for high school and college age students. This test was taken by practically all of the enrolled students as a part of the admission procedure. The adult norms were used. The test publisher reports a norm mean of 100. For the enrolled students, the graduates had a mean of 105.3, with a standard deviation of 9.9. The dropouts had a mean of 100

with a standard deviation of 10.9. The higher correlations of the OTIS were with: general intelligence of the GATB, .59; PACE composite, .53; the PACE general information total, .50; the arithmetic reasoning of the Dailey, 51; scholastic total of the Dailey, .57; and, the Dailey TST total, .50.

Correlations with rank in high school class and GPAs were within the range of .20 through .25 with the exception of the math and science GPAs which were somewhat lower at .16. Correlations with the PACE sub-scores and totals were generally within the range of .42 to .53. Correlations with grades achieved within the PN program and with the average ratings of RN potential based on classroom ratings and clinical performance were typically within the range of .17 through .29. Correlations with the NIP and TUC and their various sub-scores were generally in the range of .11 to .15. The OTIS scores correlated with the SBL scores at approximately the same level, .14, as the verbal sub-test of the GATB but significantly lower than the PACE verbal and intelligence measures, .25 and .32. The verbal and intelligence measures of the Dailey correlated with the SBL scores at .21 through .26. A -.23 correlation was found between the OTIS and age in years.

Pre-Admission and Classification Examination

The National League for Nursing, Evaluation Service, provides extensive test development and evaluation services for all levels of nursing. They operate the State Board Test Pool Examination Service for practical nurse licensure, SBL. Advisory committees and other professionals in the field provide test items and advisory services to the Evaluation Service for the development, validation and utilization of tests and test services. The licensure board or agency in most states purchase the test services for licensure examinations from the National League for Nursing. Each state establishes its own cut-off for licensure, although the most common score is 350. The SBL has established norms with a standard score mean of 500 and a standard deviation of 100.

The pre-admission and classification examination, PACE, is a multi-factor, standardized test developed and provided by the National League for Nursing and utilized as a selection test battery for applicants to programs of practical nursing. The PACE contains a general information and judgment test, and a vocabulary and reading test. The general information and judgment test requires 90 minutes for administration and contains 148 items divided into three sections of science and health information, general information, and arithmetic. The vocabulary and reading test requires 105 minutes for administration and contains a total of 112 items. Sub-tests within the vocabulary and reading test are made up of vocabulary and reading. A composite score is developed from all items of the two major sub-tests. Eight separate scores are recorded for each applicant; science and health information, general information, arithmetic, general information and judgment total, vocabulary, reading, vocabulary and reading total, and the composite. The "Brochure of NLN Test Services for Schools of Practical Nursing" provided by the National League for Nursing, 1968, contains norm data for the PACE. The norms were established on 11,537 PN students; raw-score means for the 8 sub-scores were: general information and judgment test, 86.2; science and health information, 32.4; general information, 35.7; arithmetic, 18.1; vocabu-

lary and reading test, 59.5; vocabulary, 31.8; reading, 27.7; and, composite score, 100.0. The composite score is the result of a weighted combination of the other scores with a forced mean of 100 and a standard deviation of 20.

The PACE test materials were provided by the Project to each of the cooperating schools of practical nursing. They were ordered and administered directly by the cooperating schools. All scoring and reporting of results was performed by the NLN Evaluation Service. Results were provided directly to the cooperating schools and the Project. It should be expected that the PACE scores would have higher correlations with success in the PN programs than most other instruments since it was developed and standardized specifically to select students for practical nursing programs; this is especially true for the PACE, NIP, TUC and SBL since all instruments were developed by the same persons and procedures.

Prior studies reported by the NLN have included correlations of .70 between the PACE composite and the SBL exam, and the other sub-tests have typically correlated within the .60's. The arithmetic sub-test score of the PACE usually has shown a lower correlation with both the SBL, .48, and with the in-program achievement tests, NIP and TUC. The general pattern of inter-correlations for the PACE scores and the scores of the earlier versions of the NIP and TUC were typically in the .50 to .70 range.

In the current Study, correlations for the eight scores of the PACE and the Dailey test scores were usually within the range of .40 through .70. Somewhat lower correlations were found for the SVT of the Dailey, .20 to .40. The higher correlations were found for the PACE general information score and the Dailey vocabulary, scholastic and TST total, .53 to .62. The GATB verbal and the PACE scores correlated in the range of .57 to .68. The GATB verbal score had consistently higher correlations with the PACE scores than the GATB general intelligence score.

The PACE scores and high school achievement, as shown by rank in class and GPAs, correlated most often in the range of .20 through .34. Again, the math GPA correlations were somewhat lower, .16 through .32. In general, the correlations for the PACE scores and high school achievement were somewhat higher than similar correlations between high school achievement and the GATB or the OTIS scores.

Inter-correlations among the PACE sub-scores range from .70 to .95. The arithmetic score had somewhat lower inter-correlations with other PACE scores, .43 through .47. Correlations among the PACE sub-scores and grades given in the five nursing areas by the PN faculty members had correlations generally from .20 through .31. Correlations for the geriatrics area were generally lower, in the .10 to .15 range. The final rating of classroom achievement by the PN faculty members and the PACE scores had correlations of .17 through .28; patient relationship ratings and PACE correlated at .02 to .06; and clinical performance ratings with PACE scores were .10 to .14.

Essentially no meaningful correlations were found for the PACE scores and job satisfaction scores or between the PACE scores and the Minnesota Vocational Interest Inventory scores.

The correlations for the NIP and TUC PN achievement test scores,

taken during the practical nursing program, and the PACE scores were most often in the range of .22 through .35. These correlations are significantly lower than those reported by the NLN in prior studies. SBL scores correlated with the scores of the PACE in the following magnitudes: PACE composite, .32; science and health, .26; general information, .26 ; arithmetic, .20 ; general information total, .29 ; vocabulary, .28 ; reading, .31 ; and, vocabulary and reading total, .32 . It is interesting to note that the means on each of the tests of the PACE for the dropouts are above those reported for the norm group by the NLN.

High School Achievement

High school achievement measures were obtained in terms of rank in last high school class, overall GPA and GPAs for each of English, math, science and practical arts. Inter-correlations among the high school rank and the GPAs ranged from .40 through .58. Correlations of the high school achievement measures and the standardized tests have been reported in earlier sections. In general, the correlations with standardized measures in the verbal and general information areas ranged from approximately .20 to .35. Correlations of high school achievement and the grades given in the five basic PN areas by the faculties at the schools were typically in the range of from .10 through .19. Correlations of high school achievement measures with NIP and TUC achievement measures were very similar to those with the grades given by the PN faculty.

Essentially no relationships were found between high school achievement measures and the MVII scores or with job satisfaction measures. SBL scores showed correlations of: high school rank, .18; high school GPA, .15; English GPA, .16; math GPA, .14; science GPA, .15; and, practical arts GPA, .10. The highest correlations of the high school achievement measures were with the PACE scores which ranged from .21 through .35 for the composite score.

Interest and Maturity Measures

Two standardized instruments of the interest and maturity type were included in the tests administered by the Project staff at the school testing sessions, the Minnesota Vocational Interest Inventory (MVII) and the Crites Vocational Development Inventory (VDI). It was assumed that these measures might prove to be useful in the selection process for students entering the PN education programs. Age of the enrolled students is included in this section since it may be interpreted as a gross measure of maturity.

Minnesota Vocational Interest Inventory

The MVII was developed by Kenneth E. Clark and David P. Campbell and is published by the Psychological Corporation, New York, N.Y. The early research leading to the MVII had its beginnings during World War II in the development of vocational interest inventories which could be of assistance to Navy counselors in placement of enlisted personnel. The MVII is based on the occupational interests and patterns of men and

women employed in non-professional occupations. Most of the work has been accomplished with men. The instrument is composed of 158 triads of brief statements describing the tasks and activities involved in a number of different occupations. Examinees are asked to indicate their preference for the task in each triad by choosing the one most liked and the one most disliked. Scores are derived to provide an index of similarity between the examinee's interest and those of persons in a variety of non-professional occupations. It is designed to be used for persons fifteen years of age and above.

The MVII assumes that workers in a given occupation possess likes and dislikes in common and that these differ from those of workers in other occupations. The responses are scored and interpreted by two sets of keys, "occupations" and "homogeneous." Twenty-one keys have been developed for specific occupational groups. They include: food service, retail sales clerk, tabulating machine operator, hospital attendant, radio-TV repairman, machinist and stock clerk. Nine "homogeneous keys" have been developed by identifying clusters of inventory items that have a high inter-correlation. These clusters are viewed as the 9 factors underlying interests as measured by the MVII. The "homogeneous keys" are identified as follows: mechanical, health service, office work, electronics, food service, carpentry, sales-office, clean hands, and outdoors.

The authors of the MVII indicate that the scores on this instrument are relatively independent of intelligence or abilities as measured by aptitude and intelligence tests. The scores summarize the individual's preference for work; they do not indicate those areas in which he has the greatest skill or greatest possiblity of attaining competence. To facilitate interpretation of the scores, a profile of standard T-scores is provided as well as the scores themselves. About 2/3rd's of an occupational group score above 45 on their own occupational scale.

The entire MVII battery was administered to all enrolled students. Inter-correlations among the MVII scores and approximately 150 other variables were computed. Means, standard deviations and inter-correlations of the hospital attendant occupational scale and the homogeneous scales for health service, office work, food service, and sales-office work are reported in the Tables D.1 and D.2. The mean score for the graduates on the MVII's occupational scale for hospital attendants was 55.7. Means for the homogeneous scales were: health service, 76.9; office work, 59.6; food service,66.0; clean hands, 56.7; and sales-office, 67.2. Means for the dropouts were generally 1 to 3 points lower on each scale. It was interesting to note that no individual in either the graduates or dropouts scored below 45 on the hospital attendant scale. Apparently there are some commonalities among the health services, food service and sales-office scales since the PN enrolled students tended to score high on each of these scales.

The MVII was also included in the Project Mini-Score conducted by Pucel and Nelson at the University of Minnesota as U.S.O.E. Project No. HRD 5-0148. They report profiles for practical nursing students who entered and successfully completed the PN training programs in the area schools of Minnesota. For a sample of 370 successful students they reported means of: health service, 78.3; office work, 57.9; food service, 67.7; sales-office, 66.6; and, clean hands, 56.6. The 50th percentile

scores were very close to the mean scores. On the health service scale, 2/3rds of all students scored within approximately 5 points of the mean.

Essentially no relationships, as reflected by the Pearson-r correlations, were found between the scales of the MVII and the Dailey tests or high school achievement. Correlations of -.16 to -.19 were found for the hospital attendant, health service and sales and office scales of the MVII and the numerical score of the GATB. Lower and negative correlations were also found for the arithmetic measure of the PACE and GPA of mathematics in high school. Similarly, low and negative correlations were found with GPAs in high school and many other general ability measures on the other standardized instruments. Inter-correlations among the MVII scales showed a -.25 correlation for health services with office work, and for office work with food service. The hospital attendant scale showed correlations with job satisfaction measures of .09 to .11; correlation with the SBL score was .10. Other MVII scales and job satisfaction measures correlated at less than .09. The sales-office scale generally had the higher correlation of the MVII sub-scores with the NIP and TUC achievement scores. Most of these correlations ranged from .13 through .20; the sales-office score correlated .18 with the SBL examination. The hospital attendant scale and the NIP and TUC sub- and total scores correlated generally in the range of .08 through .10. Essentially no relationships were found among the MVII scales and the grades given by the PN faculty.

Based on these data, it would appear that the MVII scales do not have significantly meaningful relationship with either the faculty evaluation of performance within the practical nursing program or with measures of job satisfaction after completion of the PN program. It is more likely that some relationship exists between the standardized NIP and TUC measures of achievement within the practical nursing program and low negative relationships exist with high school GPAs and most scores on the standardized ability measures, particularly those having to do with arithmetic and numerical aspects.

While the correlations for the scores of the MVII, the Dailey, and OTIS showed essentially no meaningful correlation for the graduates, these same scores showed correlations generally in the range of .15 to .35 for the dropouts. With the exception of the office work homogeneous score of the MVII, the other measures of the MVII correlated with the GATB in the range of .20 to .45 in approximately one-half of the cases. The higher correlations may be accounted in part by the influence of those dropouts who achieved quite low scores on the MVII measures.

Crites Vocational Development Inventory

The Vocational Development Inventory (VDI), Attitude Scale, Form 4, was administered to all enrolled students. The VDI has been developed by John O. Crites at the University of Iowa as a part of the Vocational Development Project. Form 4 was used in this Study under a "for research purposes only" arrangement. The VDI is designed to measure the maturity of the testee in making occupational decisions during late childhood, adolescence, and early adulthood. The Attitude Scale is composed only of self-descriptive statements about an individual's vocational attitude and behavior. It was designed to elicit the dispositional response tendencies

in vocational maturity which are non-intellective in nature but which may mediate both choice behaviors and choice aptitudes. It is intended to measure each of the following dimensions of vocational maturity: involvement in the choice process, orientation to work, independence in decision-making, basis for choice (i.e. interests, capacities, and values), and conceptions of the choice process.

An examinee responds to 50 items by indicating whether he agrees or disagrees with the statement, and his vocational maturity score is the total number of responses he makes which are like those of 12th graders, the criterion group used in standardizing this scale. Additional development and standardization work is underway to develop norms for other age groups and for those with various specialty interests.

A mean of 40 and a standard deviation of 3.6 was found for the VDI for the graduates while the dropouts had a mean of 38.8 with a standard deviation of 3.6. Positive but low, .03 through .09, correlations were found for the Crites with the Dailey tests, high school achievement measures, the OTIS and the GATB. Correlations with the PACE scores generally ranged from .09 through .18; except for the geriatrics area , correlations with PN faculty grades and rankings within the PN program correlated in the range of .10 through .13. Correlations with the NIP and TUC achievement test scores during the practical nursing program were generally in the range of .21 through .29. The correlation between the Crites and the SBL exam was .32. This correlation was higher than those of any standardized selection measure. Additionally, the correlation of .32 with the SBL was exceeded only by the NIP, TUC and faculty ranking in classroom achievement. Essentially no meaningful correlations were found between the Crites and job satisfaction scores.

For the dropouts, correlations between the VDI and the Dailey scores were generally in the range of .20 through .30 and between the VDI and the PACE scores generally from .31 to .36. Also, for the dropouts, the office work homogeneous scale of the MVII showed consistent correlations of -.13 through -.25 with the PACE scores. Similar negative but lower correlations with most other standardized ability measures and the MVII were found for the dropouts with the exception of the office work and the numberical scores of the GATB which was .28 and the mechanical score of the GATB which had a correlation of .29.

The generally positive relationship between the sales-office scale with numerical and clerical scores and the generally negative relationship of the office work scale and PN school achievement may reflect the difference in preference of PN students to "work with other people" rather than working with "things or materials." Their own stated preference and the scores on the MVII scales appear consistent. The MVII scales which have a personal interaction component such as radio and TV service, sales, and the health services areas are typically positive while the scales for office work, mechanical and sales-office are generally negative.

Age

Age in years was used as one variable of the inter-correlation matrix. A -.23 correlation between age and the OTIS was found. The correlations of age with other variables having a high reliance on vocabulary or ver-

bal ability are typically low, less than .15. Scores having the requirement of electrical, mechanical, and science or math elements tend to have somewhat higher correlations, .15 to .41. Contrary to the negative correlation of age with the OTIS, the scores of the PACE all showed positive correlations in a range of .15 to .38, with the science and health scores having the higher correlations, .38. Age and SBL scores showed a correlation of .10. There was essentially no correlation between age and job satisfaction or MVII interest scores.

In-PN Program Achievement Measures

Four types of in-program achievement measures were utilized in this study. Selected measures are reported in Table D.1 for the graduates. The four types of measures are: (1) average classroom and clinical performance-patient relations rating by the PN program faculty for the student's potential for success in an RN program; (2) final grade in each of the five basic areas in the PN program as given by the school faculty members; (3) overall final rating (deciles) given for classroom achievement, patient relationships, and clinical performance by the school faculties; and, (4) two standardized achievement tests, NIP and TUC, of the National League for Nursing. The State Board Licensure Exam (SBL) scores are also reported for all graduates who completed their PN program and took the SBL exam.

Achievement in the Five Nursing Areas

Grades on a 4 point scale were determined for each student at the end of their practical nursing program. Five common areas were utilized to obtain the grades from the school records of each of the cooperating programs. To obtain commonality of areas the same five areas were defined and used at each school. Each school classified the appropriate instructional units, by whatever title utilized in that school, into the appropriate, common areas for purposes of this Study. Although many different titles were utilized across the cooperating schools for the various instructional units, no difficulties were encountered in determining where the instructional units should be placed in the five categories. In cases where more than one instructor had been assigned to the instructional area or where more than one instructional unit final grade had been reported, each of the individual grades were weighed according to the procedures at that school to determine the single final grade for each of the five areas. GPAs for the five areas ranged from 2.3 through 2.8, on a 4.0 scale. In general, the results were relatively consistent with the exception of the geriatrics area. The lowest GPA of 2.3 and the highest standard deviation of 2.1 was found for this area. Grades given in the five areas typically had high inter-correlations, .63 to .80, with the exception of the geriatrics area. The correlations of the geriatrics grades with the GPAs for the other nursing areas are: .29 with basic nursing, .42 with med.-surg. nursing, .38 with pediatrics and .40 with obstetrics.

The greater variability, and generally lower relationships, of the geriatric grades can be accounted for in part due to the relatively greater differences in the way this area was included in the curriculum at the

various schools. It was treated as an integrated area with another area, as medical-surgical or as a first to last clinical experience. The generally low, practically chance, relationships with all measures other than the other PN faculty nursing grades raises the question of reliability of the geriatric grades as given across schools or within schools. The comparatively low relationship of the geriatric grades with the other four grades and five rankings given by the same faculty members would indicate a significant part of the geriatric grade was determined by factors different from those used in determining the other grades and rankings. The geriatrics area typically has the lowest status image with both PN students and faculty; graduates had the lowest preference for this area as a desired assignment after graduation. This area also received less close supervision during the clinical experiences by the faculty members since it was considered to be a comparatively "safe" area; therefore, a less objective basis for grades was available. It is also possible that the level of competency required in this area can be achieved almost equally by persons of all ability levels. A more precise explanation cannot be made from the experiences of this Study.

Psychiatric experiences showed the greatest curricular variability of any of the nursing areas. Most commonly it was handled as an integrated aspect of other areas. Other arrangements included: special short-term observations, optional experiences at the end of the program and full participation in clinical experiences at various points in the program. In the following sections, most references to grades in the PN programs will refer to the four nursing areas, those other than geriatrics. Correlations of the grades in the geriatric area are typically quite low, usually below .09; somewhat higher correlations of .12 through .15 were found for some of the general ability measures such as the composite general information total and vocabulary of the PACE.

In general, the verbal and general intelligence scores of the GATB showed the highest correlations with the grades in the four nursing areas, .25 through .38; most were above .30. The majority of all PACE scores showed correlations with the four nursing areas in the range of .21 through .30. Based on these correlations it would appear that the verbal and general ability measures of the GATB are somewhat more related to success in the four basic areas of nursing as evaluated by the PN program faculty than similar measures of the PACE. The OTIS correlated with the grades given in the four areas of nursing in the range of .13 through .19. This is somewhat lower than the verbal measures on either the GATB or PACE and approximately the same as the TST total or scholastic total scores of the Dailey.

Essentially no relationships were found among the grades given in the five areas of nursing and the measures on the MVII. Low, positive relationships of .10 through .13 were found with the grades in nursing and the VDI. Essentially no relationships were found among the grades in nursing and job satisfaction measures after completion of the program. Age and grades were similarly unrelated.

General Achievement in the PN Program

At the final data collection session, the faculty members of the individual programs were asked to rank the students in the criterion

class into deciles on three scales. The decile ranking permitted a common scale to be utilized across all programs. The number of persons to be ranked in each decile was predetermined by a format developed by the Project staff. Use of the decile ranking provided a forced distribution of students across a fixed scale. This procedure permitted a direct comparison of a student ranked in any given decile at one school with students similarly ranked at another school. However, it would be possible for the actual achievement of an individual ranked in the fourth decile at one school to be above a student ranked in the top decile at another school. It was assumed that the "best" students were placed in the top decile at each school and the "poorer"students were ranked sequentially to where the least able students were placed in the lowest decile. The decile scale was reversed to yield positive correlations with other measures.

Three scales which were felt to be potentially independent were utilized; they were: classroom achievement, patient relationships and clinical performance. All staff members who had had direct contact with the student in each of the three categories participated in the ranking. They were encouraged to refer to notes and grade records to assist in this ranking. In practically all cases the same persons participated in the patient relationship and clinical performance rankings. In a number of cases, instructors taught only the classroom phases or the related classrooms and did not have a basis for participating in the patient relationship or clinical performance ratings while they could participate in the classroom achievement ranking. Classroom achievement was not limited to the basic phases of the program but was referenced to all classroom achievement throughout the entire program. Results of these rankings are reported in Table D.1 as variables 39, 40 and 41. Intercorrelations among these measures were highest for patient-relationships and clinical performance at .65. Correlations for the other measures were: .53 between classroom achievement and clinical performance .40 for classroom achievement and patient-relationships. A relatively high degree of common abilities or factors apparently were included among the patient relationships and clinical performance ratings while a lower degree of commonality is reflected between classroom achievement and the other two measures.

Classroom achievement ranking showed correlations generally in the range of .14 through .25 with the scores of the Dailey tests and high school achievement measures; somewhat higher correlations, .26 through .28, were found with the composite, vocabulary and vocabulary and reading total of the PACE. Clinical performance scores had somewhat lower correlations with the same measures, generally in the range of .12 through .18. Patient relationships showed the lowest correlations with this type of measure, generally .03 through .09.

Essentially no relationships were found among the rankings and the interest measures of the MVII or the VDI. The correlations of the achievement rankings with the four nursing areas were generally in the range of .13 through .20. The low correlations among the two types of measures given by the PN faculty indicates relatively different criteria were being utilized for giving the final performance rankings and the grades in each of the areas of nursing. In general, classroom achievement was more related to general abilities, including vocabulary and

verbal abilities. Patient-relationship was seen as being a relatively different measure from clinical performance and both had somewhat lower relationships with general ability measures than classroom achievement and require abilities in addition to "general" ability. Motor coordination as measured by the GATB had a correlation of .14 with classroom achievement and .07 with clinical performance. Essentially no meaningful relationships were found among the PN program grades or achievement rankings and the scores of the MVII, age, VDI or satisfaction on the job after completion of the program.

Standardized PN Achievement Measures

Two standardized achievement measures were administered during the practical nursing program, NIP and TUC. The SBL was administered after completion of the program. Each of these instruments has been developed by and were purchased from the National League for Nursing.

The NLN, Practical Nursing Achievement Test, TUC, Three Units of Content, Form 754, has been developed by the National League for Nursing and standardized on prior practical nursing groups. This 148-question test provides a total score and 3 sub-scores; Body Structure and Function (46 questions); Basic Nursing Procedures (56 questions); and Nutrition and Diet Therapy (46 questions). It is scored using a formula for correction-for-guessing (number right minus 1/3 number wrong). The test is intended for administration late in a student's program and after completion of the learning experiences pertaining to the test's content. Programs in which instruction in any of the content is incorporated in later clinical nursing units of instruction were advised to give the test near the end of the PN program. Two hours were allowed for completion of this test.

The tests were provided to the cooperating schools by the Project. They were instructed to order the test on the schedule they felt to be most appropriate for the curriculum organization of their individual program. Approximately one-half of the schools administered the test during the fifth month of the program. Others delayed administration until near the end of the program. Those who were offering an integrated curriculum were more likely to delay the test until a late date.

The second standardized achievement test utilized in this Study and reported in Table D.1 is the NLN, Practical Nursing Achievement Test, NIP, Nursing Including Aspects of Pharmacology, Form 864. This 150-item test provides a total score and three sub-scores; Medical-Surgical Nursing (74 questions); Maternal-Child Nursing (40 questions); and Pharmacology and the Administration of Medications (32 questions). Four vocational adjustment questions also contribute to the total score. The test is scored using the formula for correction-for-guessing. This test is intended to be administered near the end of the program, after the students have completed their major learning experiences. Two hours were provided for completion of the test. All schools administered the NIP during the last month of their PN program.

The NLN reports the following norm data for the TUC: Body Structure and Function mean, 27.2; Basic Nursing Procedures, mean 33.5; Nutrition and Diet Theraphy, mean 25.1; and, Total TUC score mean, 85.9. These norms were established on 1007 cases. Based on 1000 cases the NIP norm means

were: Medical-Surgical Nursing mean,45.1; Maternal and Child Nursing mean, 26.4; Pharmacology mean, 19.4; and, Total Score mean, 92.5.

Means for the graduates of the students in this study were: Body Structure and Function, 29.4; Basic Nursing, 32.3; Nurtition, 25.8; Total Score on the TUC, 88.3. Mean scores on the NIP for all graduates were: Medical-Surgical Nursing, 47.8; Maternal and Child Nursing, 28.2; Pharmacology, 19.7; and Total NIP score, 97.1. All mean scores for the graduates in this Study exceeded the norm means with the exception of the Basic Nursing sub-score of the TUC. Inter-correlations among the sub-scores of the NIP and TUC typically ranged from .35 through .61. Correlations for the sub-scores with the totals of each of the two tests typically range from .47 through .90; these correlations are unrealistically high due to the part-whole relationship. These inter-correlations are somewhat lower than those for the validation group reported by the NLN based on 300 students and earlier forms of the two tests.

Correlations of the NIP and TUC sub-scores with the Dailey sub-test scores and high school achievement measures were most often in the range of .11 to .28. Somewhat higher correlations, .18 through .28, were found for the TST total and the technical and scholastic total score of the Dailey. Correlations with the OTIS were in the range of .11 through .20. The total score correlations of each NIP and TUC were somewhat higher than the sub-scores with other measures. Practical arts GPA correlated lower, .03 through .10, than with the GPAs for the academic areas. The science GPA and the science sub-score of the Dailey were only slightly higher related to NIP and TUC than other measures. Correlations of the OTIS with the NIP and TUC total and sub-scores were generally in the range of .10 through .15. Correlations of the NIP and TUC scores with age exceeded .10 in only two cases; they were nutrition and TUC total scores at .17 and .14 respectively. Correlations among the NIP and TUC and the GATB scores were most often in the range of .05 through .14. Some exceptions to this pattern were: the basic nursing sub-score showed the highest correlation with the spatial, verbal and general intelligence of the GATB which correlated from .21 to .29. The numerical sub-score of the GATB and the TUC basic nursing sub-score had a correlation of .40.

Correlations among the NIP and TUC and the PACE sub-scores and totals were generally in the range of .18 through .35. The higher correlations within this range were typically among the total scores of the NIP and TUC and the composite of the PACE; more often these were within the range of .24 through .35. The NLN reported inter-correlations in their earlier validation study which were more often in the range of .45 through .65 for the same measures. The correlations among the NIP and TUC scores and the grades given in the geriatric area showed essentially no relationships, correlations of less than .05. Correlations with the grades given for the other four nursing areas by the PN staff most often were within the range of .11 through .23. Correlations with the grades given in basic nursing were more often at the higher end of this range. Correlations of a similar magnitude were found for the patient relationships and clinical performance rankings and the NIP and TUC scores. Rankings given for classroom achievement by the faculties most often correlated with NIP and TUC within the range of .24 through .35.

Correlations of the MVII scores and achievement on the NIP and TUC were most often less than .10. Correlations with the office work and food service homogeneous scales were less than .07 in all except one case which was negative. The MVII sales-office scale correlated at .20 and .18 with the medical-surgical sub-score and NIP total score respectively. The VDI correlations with the NIP and TUC scores were generally in the range of .18 through .29. Highest correlations were found for the maternal and child care sub-score and the NIP total score at .29.

All correlations for the job satisfaction measures with the NIP and TUC scores, sub-scores and totals, were .08 or less, approximately an equal number were negative and positive. Job satisfaction as measured by liking their present job and factors related to "job change" had consistently negative relationships with the NIP and TUC scores; all were quite low.

Correlations between the SBL score and the NIP and TUC scores ranged from .47 through .74. The NIP and TUC total scores correlated with the SBL score at .74 and .66 respectively; the medical-surgical sub-score correlated with the SBL at .69.

State Board Licensure Examination

The appropriate state board or legal agency in each of the 50 states administers a standardized test, SBL, to eligible individuals as one of the requirements for issuing a license to practice practical nursing. 48 of the 50 states purchase a test from the National League for Nursing, Evaluation Service. The scores on the examination are reported as standardized scores with a mean of 500 and a standard deviation of 100. Each state determines its own minimum cut-off score for passing. The most typical minimum score for licensure is 350.

The mean standard score for all graduates in this Study taking the exam was 530.3 with a standard deviation of 85.2. This is slightly above the established national norm. Correlations of the SBL exam scores with the vocabulary, electrical, mechanical, scholastic total and the TST total of the Dailey were from .21 through .25. Correlations with measures of high school achievement were typically in the range from .14 through .18. Correlation with age was .10 and with the OTIS .14. The correlations with the verbal sub-score and the general intelligence sub-score of the GATB were .13 and .10 respectively; other scores of the GATB correlated at .05 or less. Correlations of the SBL and the PACE scores were in the range of .20 through .32. The PACE composite and vocabulary total correlated at .32 while the reading sub-score had a correlation of .31.

Faculty evaluation in terms of grades given for the four areas of nursing correlated at .18 through .24. Correlations with the rankings by the PN instructors on final achievement ratings were: classroom achievement,.37; patient relationships, .16; and clinical performance,.25.

The VDI and the SBL had a correlation of .32. Among the MVII scores, only the sales-office score exceeded a correlation of .10; the sales-office score correlated at .18. Correlations of the SBL and job satisfaction measures were typically negative and less than .06.

Enrolled Students' Potential for RN Preparation

It was assumed by the investigators that a number of students enrolled in the criterion PN class actually had the potential to become a registered nurse, RN. To obtain an estimate of the frequency or proportion of this situation, the faculty members of the PN programs were asked to make an estimate of whether or not each of the individual students had the potential for completing an appropriate educational program and becoming an RN. However, since each faculty member who had direct instructional contact with each student was asked to make the evaluation, a number of cases occurred where the same student was rated as having potential by one or more staff members and as not having potential by one or more other staff members. Consequently, a three-point scale was established. A 3 was used where all staff members agreed that the student had potential, a 2 was used where there was an even division of opinion, and a 1 given where all agreed that the student did not have the potential for becoming an RN. Each student was to be rated on three separate abilities: classroom achievement, clinical performance and patient relationships.

In giving the instructions to the PN program faculties, a registered nurse program was defined as any one of: 1) a diploma program, 2) an associate degree in nursing program, or 3) a baccalaureate nursing program. In quite a number of cases, individual PN program faculty members made remarks which indicated they felt that the associate degree program would be easier to complete than a diploma program. In some cases, they indicated that the student could probably complete the associate degree program but they were doubtful if the student could complete a diploma program. It should be noted that most of the faculty members who used this scale of reference were graduates of diploma programs.

The faculty members completed the RN potential ratings at each of the second and final visits. At each visit, the faculty members were asked to make their rating in terms of the student's current capabilities and performance. In many cases, they indicated that they felt the student did not have the potential when they entered the PN program; but after obtaining the education and experiences to that point in the PN program, the student then had the potential for completion of the RN program.

The classroom rating and the rating for the combined clinical performance and patient relationships area on the basis of RN potential are reported as variables 32 and 33 in Table D.1. These ratings were obtained at the second visit, approximately the fourth month of training. Since in many schools, the students had had limited clinical experiences at that time, it was necessary to use a combined rating for the clinical performance and patient relationship areas. Since several staff members rated each individual the rating is reported as an average in the Table.

These ratings correlated with the OTIS at .29 and .24. With age, each of the ratings had low, .03 and .06, negative correlations. The classroom rating showed correlations most often of .20 through .35 and the clinical performance-patient relationships showed correlations in the range of .11 through .21, with the Dailey test, high school achievement, GATB and PACE scores. The higher correlations with the standardized verbal measures and high school achievement tends to reflect the greater reliance on general ability and particularly those involving verbal

ability. A correlation of .45 between the two ratings was found.

Correlations between these two measures and the grades in the four nursing areas were within the range of .07 through .13. The classroom rating for RN potential given at the fourth month correlated with final classroom ranking at .27. Correlations with the patient relationship and clinical performance rankings at the end of the program with the two RN potential ratings were at .03 and .06. End of program clinical performance rankings correlated with the fourth month RN potential classroom ratings and clinical performance - patient relationships rating at .16 and .14 respectively. Very low, .10 or less, negative relationships were found for job satisfaction measures with the classroom and combined clinical performance - patient relationship ratings at the fourth month. The classroom ratings showed correlations generally in the range of .11 through .19 with the NIP and TUC achievement measures while the clinical performance - patient relationship rating had lower correlations, .03 through .07.

At the fourth month evaluation period, the instructors rated 152 of 863 persons, 21.4%, as having potential for completion of an RN program. At the final session, they rated 221 of 933 students or 23.7% as having potential for completion of an RN program. At each of the two rating sessions the faculty were asked to disregard financial abilities and other factors that might be related to entering or completing the RN program but to make their judgment only on the basis of capabilities for successful completion of the program and performance as an RN. At the final session the faculty were asked to give a single yes or no response for RN potential.

The following relationships were found between the faculty ratings of RN potential at the final session and other selected measures. Point biserial correlations of the rating of RN potential with grades in the five basic nursing areas of the PN program were as follows: basic nursing, .25; med.-surg. nursing, .30; geriatrics, .19; pediatrics, .25; and, obstetrics, .28. Correlations for the end of program overall evaluations were: classroom achievement, .40; patient relationships, .11; and, clinical performance, .24. The correlation between the SBL scores and RN potential was .23.

Selection Instruments, Faculty Evaluations and Achievement Measures

One of the purposes of this Study was an attempt to identify selection instruments that might prove to be the most valuable in the selection process so far as predicting in-program success and success in passing the SBL. Additional measures of patient relationships and clinical performance were attempted as possibly better measures or predictors of successful performance as practical nurses after they left the preparation program. The high inter-correlations among the various sub-scores and totals of the individual instruments found in this Study are to be expected. Standardization and statistical procedures in the development of the tests directly contribute to such inter-correlations, as well as the part-whole relationships where a sub-score is included in a total score and the two correlated with each other.

The various measures of general ability, particularly the verbal and vocabulary measures, tend to measure a common factor that is important in all cognitive aspects of the standardized measures and classroom achieve-

ment. The large sample size in this Study contributes to the high number of statistically significant inter-correlations. However, in most cases the magnitude of the correlations were small enough that strong predictive relationships cannot be given between the individual measures and success on either the faculty evaluations or the SBL. The verbal and general intelligence measures of the GATB were almost equally as good predictors of faculty determined, in-school achievement as the PACE totals and sub-scores. Each have correlations in the high 20's to 30's. However, the PACE sub-scores and totals show significantly higher correlations with the NIP and TUC in-school measures as well as with the SBL. Rank in high school class is the better predictor of the high school achievement measures, that is, better than total or individual course GPAs.

The faculty evaluations of classroom achievement reflect a higher dependence upon factors measured by general ability instruments. Rankings of patient relationships and clinical performance by the faculties reflect criteria being used that are quite different from those utilized in giving either the nursing grades or final ranking in classroom achievement. Each of the patient oriented evaluations show low correlations with the relatively cognitive NIP, TUC and SBL measures which makes it appear that the grades and achievement ratings given by the faculty were based on factors quite different from those measured by NIP, TUC and the SBL examination.

Additional sub-investigations were made in this Study to attempt to determine appropriate possible cut-off scores on the various PACE subtests so far as determining whether or not a student would successfully complete the program and pass the SBL. PACE composite raw scores were utilized which approximated the 25th percentile on the standardized norms. When investigating this 25th percentile as a potential cut-off for determining prediction of success in the program, approximately 1/3rd of the students scoring below this figure did not complete. However, if this cut-off had been utilized, the additional 2/3rds of the students scoring in this range would have been eliminated when, in fact, they were able to successfully complete the program and pass the SBL.

A number of schools had selected their students on criteria such that no admitted student scored below the 25th percentile at that particular school. The dropout rates at these schools were lower than the average for the total enrolled group. Based on investigations in this Study, it would appear that the PACE is the better selection instrument so far as predicting the in-school achievement on the NIP and TUC exams and the SBL. The GATB will function almost as well as the PACE in predicting faculty evaluation. However, each school, due to the philosophy and nature of its program, will have to establish meaningful cut-offs based on experience at the individual school. The relationships are not sufficiently consistent between the admission tests and success within the PN school and on the SBL to recommend specific instruments or cut-offs for the total group of PN programs or at individual schools.

The low relationships between the selection instruments and standardized in-school achievement measures with the in-school grades given by the PN faculty would indicate that a number of students may be encouraged to drop from the program due to faculty evaluation even though they may have scored high on the admission instruments and might pass the SBL. A great part of the low relationships between standardized instruments and

the grades given by faculty during the school may very likely be due to the unreliablity of the devices used by the PN faculty. Differential standards and evaluation criteria among the various PN faculty members also very likely contributes to these low relationships. Difference among schools contributed to the low relationships in this Study although the use of the decile scale for final rankings was designed to reduce this difference.

Each of the selection instruments showed some relationships to both in-school success and end of program standardized measures. Therefore, it is appropriate to give some weight to these instruments in making student selection decisions, although strong or primary reliance should not be given to such scores once they exceed a low level. It seems obvious that there were a number of factors which contributed to successful achievement within and at the end of the programs. It is the combination of factors that must be considered rather than giving primary reliance on any one measure or type of measure.

Neither the VDI nor the MVII scores showed high relationships with success measures in the practical nursing program or with job satisfaction upon completion of the program. In general, the hospital attendant score and the health service homogeneous score showed quite low but consistently negative relationships with cognative achievement measures such as the GATB,PACE and OTIS. The essentially negative correlations for the office work and food service scales with the health service scale appear to indicate a distinction between the persons interested in practical nursing as "person oriented" activity while office work and food service are seen as "material oriented."

The older PN students, who were more likely to have had some prior health occupations experience, apparently have attained an increase in vocabulary and general information as required by the PACE exam. Also, they tend to score higher on the electrical,mechanical and science subtests of the GATB and Dailey. Very likely these higher scores reflect general experiences rather than high school or other formal learning experiences.

Satisfaction on the job as reported by the graduates on follow-up does not appear to be related to any of the selection or in-school measures. The low and very often negative correlations with high school achievement and the in-school ratings of RN potential may reflect a higher level of satisfaction by the "average" student as opposed to the students who have higher ability as measured by the selection instruments and the high school achievement measures. The graduates were extremely satisfied with their jobs following training and therefore reduced the differentiation that might have been shown by this measure.

Instructor's Evaluations and Achievement Measures

It was assumed that the PN program faculty members would more likely evaluate those students as having RN potential who also made high scores on the SBL. An additional assumption was that instructors might tend to evaluate students as having RN potential on the basis of expectations in achievement on the in-school standardized achievement measures and their past classroom achievements. It should also be noted that the faculty had access to the results of the various selection measures as well as their own evaluation records. Across the two states the faculty members

designated 23.7% of all students as having RN potential who fell below the national mean on the SBL. On the other hand, 39.1% of the students who achieved above the national norm were not selected by the faculty as having RN potential. It is quite apparent that the PN program faculty members were making their judgments to a large extent on factors other than those measured by the NIP, TUC or SBL. See Table D.3

Graduate's Preference for PN and RN

At the second data collection session, approximately the 4th month, the students were asked, "If there was a two-year associate degree RN program in this community, do you think you would --?" The possible responses to this question were structured in an attempt to gain the student's relative evaluation of preference for the PN program in which they were enrolled or their desire for an RN program. Table 4.2 reports the frequency and percentages of response to this item. 16.2% of all enrolled students indicated that they had previously applied to a RN program. Most had been denied admission to that program prior to application for the PN program. An additional 17.1% indicated that they planned to enter a RN program after completion of the PN program. Approximately equal percentages of 17.5 and 17.8 indicated they chose the PN program and planned to work as a PN because they had a preference for the kind of duties performed by PNs or they chose the PN program because they felt it was more appropriate to their education background and abilities. Only 3.4% indicated that they chose the PN program because it was less expensive than a RN program. On the basis of the students' responses to this item, it would appear that 33.3% of the students had a preference for the two-year RN program if it were available.

The question concerning PN or RN programs was repeated at the end of the PN program. At this time, 113 of the 155 students who indicated they had made a prior application to a RN program were evaluated by the PN faculty as not having the potential for the RN program. Table D.3 presents the data for the students who were evaluated as having or not having RN potential by the PN faculty and the preferences expressed by those students relative to the RN or PN program. Of the 165 students who indicated that they felt the PN program was more appropriate to their education and abilities, 42 students were evaluated as having potential for the RN program. Of the 149 students who indicated they planned to enter a RN program after completion of the PN program, the PN faculty rated 32 as having such potential. 168 students indicated they preferred the PN program because of the kind of duties perfomred by PNs; 34 of these students were rated by the faculty as having a potential for the RN program.

152 enrolled students were rated as having RN potential at the fourth month and a total of 240 were rated as having RN potential at the end of the PN program. Of the 240 graduates who were rated as having RN potential at the end of the program, 17.5% indicated that they had made prior application to a RN program. A somewhat smaller percentage, 13.3%, indicated that they planned to continue to an RN program at a future date. 14.2% indicated they preferred the practical nursing program and type of duties performed by practical nurses in preference to attending a RN program. An additional 17.5% indicated that they probably would not continue to a RN program due to their own evaluation of their educational

TABLE 4.2 : CHOICE OF PN OR RN PROGRAM BY ENROLLED STUDENTS

STUDENT PREFERENCE	N	%
Have previously applied to RN	188	16.2
Plan to enter RN after PN	199	17.1
PN program takes shorter time	114	9.8
Prefer PN kind of duties	207	17.8
PN more appropriate to prior education and abilities	203	17.5
Not as expensive as RN	40	3.4
Undecided	189	16.3
Other	22	1.9
TOTAL	1162	100.0

background and abilities; essentially doubting their own ability to successfully complete the RN program. An additional 12.9% indicated they had a preference for the PN program because it was of shorter length or was more appropriate to their present interests and resources. See also Table D.3.

The percentages in the above categories were essentially the same as they were at the second test session.

Of the total graduates, 149 indicated that they intended to enter a RN program in the future; however, only 22.5% of these were rated as having potential for success in a RN program by the PN faculty. Among all graduates, approximately 4%, 32 persons, indicated they had plans for future entry in a RN program and the PN faculties indicated that these same students had potential for success in the RN program. This percentage may be less than half of the actual potential since many students reported they were undecided or did not see it as being possible to attend a RN program at that time.

There is some evidence that the persons who reported that they were not likely to enter a RN program due to their own "education and ability" were underestimating their potential. 16.6% of these persons were rated as having a RN potential by the faculty at the time of the second data collection visit and 27.4% of these students were rated as having RN potential at the end of the program. The increase in the number of persons rated as having RN potential from the second session to the last session indicates a more in-depth knowledge of the students and the intervening learning experiences. There was a large group of PN graduates who indicated they desired to go on to RN programs but who the instructors felt did not have the ability to succeed; approximately an equivalent group, 208 graduates, indicated that they did not intent to go to a RN program but the faculty estimated they had the abilities to be successful.

Table D.3 also shows the tabulation of SBL scores by student preferences for PN or RN and whether or not the faculty rated the student as having potential for success in a RN program. Information was available

for 240 who were rated as having potential and 781 students who were rated as not having potential for the RN program where SBL scores were also known.

In comparing the faculty ratings of RN potential with scores attained on the SBL there are some significant discrepancies. 41 of the 78 students who scored 650 and above on the SBL were rated as having RN potential. At the other extreme, 16 of the 67 who scored 399 or below were also rated as having RN potential. 43.2% of those who were designated as having RN potential made scores of 660 and above; and, an additional 24.2% scored in the 550-599 range. These discrepancies account for at least a part of the low correlation of .23 between SBL scores and the faculty rating of RN potential. Four of the 22 persons who scored 349 or below, failing to meet the minimum of 350 for PN licensure, were rated as having potential for becoming an RN.

PN Achievement by Prior Employment and Type of PN School

Selected investigations concerning possible differential achievement by type of PN school and prior occupational experience, particularly in the health occupations area, were made.

State Board Scores By Type Of PN School

Table 4.3 reports the State Board scores for the six types of PN schools reported in earlier sections of this report. The mean for all SBLs was 530.3. The distribution of SBL across all enrolled students is skewed toward the higher scores; that is, a higher proportion of students scored above the national norms than below.

A total of 23 students, 2.2% of all graduates, scored 349 or below, the cut-off for passing the exam in Illinois and Iowa. 11% of the students in the MDTA schools scored 399 or below. This percentage is significantly higher than for any of the other types of schools. At the other extreme, 11.5% of the MDTA students scored 650 or above for the highest percentage of any type of school. 24.2% of all graduates scored from 500 to 549; the MDTA graduates had 18% scoring in this range while the Hospital schools had 34.5% in this range. The highest percentage of graduates of the Hospital schools scored within the 500-549 range and lesser percentages at each of the higher and lower SBL score ranges than at any other type of school. Graduates of the MDTA schools showed a wider range of scores than any other type. Since the students at the Hospital schools generally scored higher on the admission tests it is somewhat surprising that they have the lowest percentage of students scoring at 600 and above.

Graduates of the "Other" type of school scored almost entirely in the range from 400 through 599. Except for the Hospital and "Other" schools, approximately one-third of all graduates scored in the 350 to 500 range; on the national norms approximately 43% would score within this range. The range of scores at each type of school were quite similar in overall pattern despite differences in selection standards, age and educational background. Higher standards were more often used at the Hospital, Area Vocational and Junior College programs. A part of the SBL score pattern similarity can be attributed to the fact that some schools had higher dropout rates which eliminated students more likely to fail the SBL exam from actually completing the program and taking this examination.

TABLE 4.3: STATE BOARD SCORES BY TYPE OF SCHOOL

STATE BOARD EXAM SCORE		Voc. Area	Local H. S. Board	M.D.T.A.	Junior College	Hospital	Other	TOTAL
349 or Below	N	2	8	6	3	3	1	23
	%	1.39	2.0	3.1	1.9	2.2	4.5	
350-399	N	2	19	15	6	3	0	45
	%	1.39	4.8	7.9	3.8	2.2	-.-	4.3
400-449	N	7	51	16	17	6	6	103
	%	4.9	12.9	8.4	10.7	4.3	27.3	9.8
450-499	N	28	57	33	27	22	6	173
	%	19.6	14.4	17.3	17.0	15.8	27.3	16.5
500-549	N	34	93	35	39	48	5	254
	%	23.8	23.5	18.3	24.5	34.5	22.7	24.2
550-599	N	32	89	35	42	32	4	234
	%	22.4	22.5	18.3	26.4	23.0	18.2	22.3
600-649	N	24	51	29	17	18	0	139
	%	16.8	12.9	15.2	10.7	12.9	-.-	13.2
650 or Above	N	14	28	22	8	7	0	79
	%	9.8	7.0	11.5	5.0	5.0	-.-	7.5
TOTAL	N	143	396	191	159	139	22	1050
	%	13.6	37.7	18.2	15.2	13.2	2.1	100.0

Prior Health Occupations Employment and PN Program Achievement

Comparisons were made for prior experiences in the health and non-health fields and the length of time in employment prior to entry into the PN program with achievement measures in the PN program. Since a significant proportion of all PN students had some prior health occupations experience, it was assumed that those experiences might have contributed to success on achievement measures while in the PN program. Additionally, it seemed likely that prior health experiences might be reflected to a higher degree in the patient relationships and clinical performance areas than on the more cognitive type of measures. A more detailed description of the prior and post PN program employment experiences will be presented in a later Chapter. Table D.4 reports the type of previous health occupations experience and final achievement in the PN program in the areas of classroom achievement, patient relationships, clinical performance, and SBL. The in-school achievement measures are reported by decile rankings at the end of the program.

Of the known cases, 444 persons who reported prior health occupations as an aide or "unlicensed PN" were given achievement rankings by the faculties; other types of health occupations experiences included: incidental patient care, home health care, candy striper, adult health volunteer, student nursing club, Red Cross-First Aide, and "other." Data were available for 913 graduates. Overall mean rankings, on a ten-point scale, were: 5.4 for classroom achievement; 5.6 for patient relationships; and, 5.6 for clinical performance. Graduates with prior experience as a nurse's aide scored at the overall mean on each of these rankings. Graduates reporting prior experience as a candy striper or as a member of a student nursing club typically had the highest means on the PN faculty evaluation scales, generally above 6.0 on the three rankings. Somewhat surprisingly, the graduates reporting these types of experiences had the lowest mean score on the SBL of any of the prior occupational experience groups. It would appear that either the rankings by the PN faculties were based on factors different from the SBL or that the faculties tended to rank persons with experiences more often associated with RN students in a higher classification. An inspection and analysis of the rankings on the three scales and the SBL scores would indicate that persons with prior experience as a nurse's aide or "unlicensed PN" did not score significantly higher than persons with other types of experiences. In fact, the aide group tended to score slightly below the mean on patient relationships and at the mean on clinical performance. Persons who reported no prior health occupations experience scored at the overall mean on all four achievement measures.

Based on these two types of evaluation, by the faculty and by SBL scores, there were no significant differences in achievement according to the type of prior health occupations experience or whether or not the person has had experience in the health occupations field. However, it may be that many of the persons who had prior experience as an aide would not have achieved as well in the practical nursing program had they not had their prior experience.

Type and Length of Employment and Achievement

Further analyses of the final achievement rankings and SBL scores were made according to the level of employment and number of months of employment at that level prior to entering the PN program. Employment levels were classified as skilled health, skilled non-health, semi-skilled non-health, and unskilled non-health, and none or unknown. The majority of the skilled health persons had worked as nurse aides; semi-skilled health is also included in this category. A total of 784 graduates reported employment at the skilled health level, 58 employment at the skilled non-health level, 112 semi-skilled non-health, and 186 unskilled non-health employment. Table D.5 reports level of prior employment and number of months employment by achievement in PN school and SBL scores. Persons employed in the skilled health occupations achieved the highest mean decile ranking only on the classroom achievement scale. Those graduates who had prior expereince in an unskilled non-health area had the highest mean rankings on both the clinical performance and patient relationship scales.

Mean classroom rankings for the skilled health group increased as the length of employment increased from one month to twelve months. Beyond this point, a longer period of time in employment resulted in lower decile rankings. This pattern did not exist for person with prior experience in non-health employment. Most often, those persons who had been employed from one to three months achieved higher classroom mean rankings than persons who had been employed more than one year. A similar situation existed for the persons with skilled health experiences and their rankings on patient relationships and clinical performance. That is, persons with less than 12 months prior employment tended to rank higher than persons with more than 12 months employment experience in the health area. A slight reversal of the rankings by length of health occupations employment was found for SBL scores; persons who had been employed at the skilled health level for 25 months or more scored highest on the SBL and those employed 6 months to 24 months next highest while those employed one to 3 months in the skilled health occupations scored lowest.

Among those persons who had been employed in skilled non-health positions, there was a tendency for those who had 25 or more months of employment to score higher in the rankings by the PN faculty and lower on the SBL. This group, in general, had lower means on all three rankings by the PN faculty but higher, 5.6 as compared to 5.2 for the skilled health group, on the SBL. Persons who had employment in an unskilled non-health occupation attained, in general, higher mean decile rankings, 5.7 for classroom achievement, 6.0 for patient relationships and 5.9 for clinical performance, than persons who had prior employment in a skilled health occupation. It is notable that most persons in the unskilled non-health category had been employed 6 months or less in that position. Persons employed in the skilled non-health area achieved higher average scores on the SBL than the other three types of employment groups.

The analyses of type and length of prior employment when compared with achievement within the program and SBL reveals a number of mixed patterns. From these data, only general tendencies can be cited. They include: those persons with approximately one year of employment in a skilled health area tended to score somewhat higher in classroom achievement,

patient relationships, and clinical performance than persons employed at the skilled and semi-skilled non-health levels but lower than those with prior employment at the unskilled non-health level. Persons employed at the skilled non-health level tended to do somewhat better on SBL scores than persons with experience in any of the other areas, but ranked lower on the in-school achievement rankings. No significant advantages in either PN faculty evaluations or SBL scores were associated with prior employment at the skilled health level. Again, there seems to be a discrepancy between the achievement rankings as given by the PN faculties and scores attained on the SBL. Persons with one to three months of prior employment consistently scored lower on the SBL than persons with over three months prior experience, but this relationship did not maintain for the rankings by the PN faculty. This difference may be accounted for, at least in part, by the fact that many students had one to three months experience immediately following high school and prior to entering the PN program. Therefore, the one to three month employment group was comprised primarily of new high school graduates.

Summary

This Chapter reports the results of the standardized selection instruments, in-school achievement as measured by standardized instruments and by faculty evaluation for all enrolled students and a follow-up questionnaire to the graduates. The primary means of analysis was by use of correlational statistics. Means, standard deviations and correlation coefficients for the total group and selected sub-groups are reported. Comparisons were made with high school achievement as measured by GPAs and rank in class. Results of the SBL examination and satisfaction with the job after completion of the program for the graduates were also reported and compared.

The sub-tests and totals of the Dailey Vocational Guidance Test Battery, the Otis Test of Mental Ability, the Pre-Admission and Classification Examination and the General Aptitude Test Battery showed high intercorrelations for both the graduates and the dropouts included in this Study. Typically, the correlations were within the range of .40 through .68. Those sub-tests and totals which dealt with general intelligence and verbal measures had inter-correlations in the range of .65 through .85. High school achievement had correlations of .15 through .30 with most of the general intelligence type of measures as well as with the PN faculty grades given for the various nursing areas. Correlations of a similar magnitude for high school achievement were found with the standardized practical nursing achievement tests, NIP, TUC and State Board Licensure Exam. The higher correlations for high school achievement was with PN classroom achievement. Other high school GPAs achieved somewhat lower correlations, .15 through .20.

Each of the standardized selection instruments and the high school achievement scores had statistically significant correlations with PN in-school achievement measures and the State Board License results. However, these correlations were generally in a similar range and no one instrument was found to be a significantly better predictor of in-school achievement or State Board exam scores than the others. The PACE test showed somewhat higher correlations with the NIP and TUC achievement tests

and the State Board exam score than other measures. However, the GATB was equally as good as the PACE in predicting the PN in-school achievement as given by the practical nursing faculty. The PN classroom achievement grades and rankings were most closely related to the standardized selection and achievement measures. Rankings on patient relationships and clinical performance were less dependent on those attributes measured by the standardized instruments PN faculty members tended to use somewhat different evaluative criteria in making each of the three rankings.

From the results of this Study, it was not possible to establish a minimum recommended cut-off score for any one of the selection instruments. A combination of factors appeared to be operating sufficiently to reduce the correlations between instruments and achievement. These factors included differences among the PN programs as well as factors in the individual student's situation. Many of the dropouts were due to family situations, finances and change of interest as well as academic abilities. The norms used as reference for most of the standardized instruments were in terms of high school graduates or applicants for practical nursing. In these cases, it would appear that once the student is able to achieve a score on the standardized selection instruments equivalent to approximately the 20th percentile, other factors may become more important than higher achievement on the selection instrument. In the case of the GATB a different norm group has been utilized and the equivalent minimum score appears to be approximately a standard score of 90 on the practical nursing battery; a standard score of 90 is equivalent to the 15th percentile. A majority of students scoring below the levels may also be able to be successful in many PN programs. The great majority of the "C" students were successful.

Analyses of occupational experience before entering the practical nursing program were made with relationships to success in the PN program. Persons who had experience in the health occupations prior to entering the practical nursing schools achieved no higher than those persons who had no prior occupational experience or experience in non-health occupations. Some caution is necessary in interpreting this finding since some of the persons who were successful may not have been able to be successful had they not had the prior experience.

Based on the student's stated preference for a practical nursing or a registered nursing program, the majority of students had selected the PN program due to their own choice based on their desire for this type of nursing activity or because they thought it was more appropriate to their interests and educational background. Possibly as many as 15% of the total graduates of the PN programs had capabilities, upon graduating, to enter and complete the RN program. This estimate is based on the joint evaluation of the PN faculty members and the student's score on the State Licensure Examination. A somewhat larger group indicated a desire to attend a RN program but were not believed to be capable of successfully completing this program by the PN faculty. Many of these students had been denied admission to a RN program and scored low on the State Board Examination. It appears that the aspiration to registered nursing is an unrealistic desire for almost 25% of the graduates of the PN programs.

Of those enrolled students who graduated from their program, the great majority, 97.8%, successfully completed the licensure examination.

By type of PN program, the patterns of scores were quite similar; this resulted in spite of the differences in selection standards, test scores and educational backgrounds, by the various types of schools.

Essentially no relationships were found among the vocational interest scores, as measured by the MVII and the VDI, and satisfaction reported by the graduates on accepting employment after completion of their PN program. One limitation to these correlations with the job satisfaction scores was the fact that the great majority of all graduates were extremely satisfied with their job and reduced the potential for identifying strong relationships.

More precise selection procedures and the establishment of appropriate cut-off scores on selection instruments will have to be established for individual schools. The differences in faculty expectations, nature of the educational program, and other institutional factors and relationships operated to reduce the direct effectiveness of the selection and predictive instruments across the various types of programs and situations. Higher relationships have been consistently found when data were obtained from a single school or program.

The relatively low relationship between the faculty evaluations and the standardized test evaluations of achievement in practical nursing indicated that the faculties were utilizing criteria which differed to a significant degree from those measured by the standardized instruments. If the purpose of both of these types of evaluation are in fact to measure or assure minimum performance standards for the practice of practical nursing, a basic question of which type of evaluation is the more appropriate must be raised. Approximately 10% of the total variance is shared in common between these two types of measures. A similar question must be raised concerning the selection instruments. Are they to be used to predict success on the State Licensure Examination or for predicting success as evaluated by the practical nursing faculty.

If the faculty evaluation can be taken as the most appropriate measure of competency to perform as a practical nurse on the basis of close contact in the clinical situation, then it would appear that the abilities to perform as a capable practitioner are to a great extent different from those measured by the licensure examination. Since it is necessary to successfully pass the licensure examination to be able to practice, the data in this Study suggest further studies and procedures which would lead to a more appropriate method of licensure examination.

CHAPTER V

COSTS AND SATISFACTIONS OF ENROLLED STUDENTS

The data reported in this Chapter were obtained at the second and final test sessions through instruments administered by the Project staff and through a follow-up questionnaire to both graduates and dropouts. In some cases similar items were included in two or more of the instruments. The second test session was held at approximately the fourth month of the program and the final session was held during the last month the students were in their PN program. Included in the instruments administered during the second session was the Resident Student Blank by Kenneth B. Hoyt. This instrument was developed and copyrighted as a part of the Specialty Oriented Student project. Professor Hoyt is now on the staff of the University of Maryland.

A total of 1350 students enrolled in the 45 criterion programs, 1056 graduated and 294 dropped out. A total of 138 non-white students enrolled with 78 graduating. At the time of the second session, a total of 1190 students, 88.1%, were still enrolled; 9.9% of the white and 29% of the non-white students. This compares with the final dropout percentage of 43.5% for non-white and 19.3% for the white students. There was more of a tendency for those non-white students who were going to drop out to do so during the first four months, when compared to the white students.

All reports of findings are based on known cases. Consequently, the number of known cases is shown for each table or evaluation. Approximately 1160 of the 1190 enrolled students were present for the second session.

Costs and Sources of Funding While Attending PN School

Each student was asked to make an estimate of the additional expenditures incurred as a result of attending the practical nursing program. Since the students had been enrolled for approximately four months they were in a relatively good position to make estimates. As might be expected, there was a wide range of estimates in each category. In making the estimate they were cautioned to take some time to actually do a mental or pencil calculation for the most recent two weeks and to make their estimate based on these figures. Tuition charges are not included as a part of the costs reported in this study. As a general policy, there was no tuition charged by the programs operated by the High School Boards, Area Vocational Schools, MDTA or the Hospital programs. Programs offered by the Junior Colleges made a tuition charge ranging from zero to the regular tuition charged all other junior college students.

Table 5.1 reports the summary of the additional costs as reported by the students across all schools. Approximately 75% of all students had some expenses for transportation in attending the PN program. The average costs across all marital status groups was approximately $5 per week. The most common range of expenses was from $2 to $10 per week. Approximately 25% each of the married students and the head of household students had to meet expenses for dependent care while they were attending the PN program. These expenses ranged between approximately

TABLE 5.1: ESTIMATED COSTS IN ATTENDING PN PROGRAM BY MARITAL STATUS

Expense	Percent Who Had Expense	Ave. Cost in Dollars	Common Range	Base of Cost
Transportation				
Single	70	5	2 - 10	per week
Married	77	5	2 - 10	per week
Head of Household	72	5	2 - 10	per week
Dependent Care				
Single	15	16	15 - 20	per week
Married	24	21	15 - 25	per week
Head of Household	25	17	15 - 25	per week
Food and Housing				
Single	50	14	10 - 20	per week
Married	38	13	10 - 20	per week
Head of Household	66	22	20 - 25	per week
Other Costs				
Single	100	10	7.50 - 12.50	per week
Married	100	12	7.50 - 17.50	per week
Head of Household	100	13	7.50 - 17.50	per week
Total for PN School				
Single	100	750	500 - 1000	per year
Married	100	750	500 - 1000	per year
Head of Household	100	850	550 - 1200	per year

INITIAL COSTS: Uniforms $32.50 average; Books and Supplies $35 average.
ORGANIZATION DUES: Yearly $9.50 average.

$15 and $25, in most cases. The average expenditure for the married group was $21 per week while that for the head of household group was somewhat lower at $17 per week. A total of 15% of all single students also had expenditures for dependent care while they attended the PN school. The range of cost for this group was similar to that for the married and head of household groups, but the average was somewhat lower at $16 per week.

Students were also asked to estimate their cost for food and housing. They were instructed not to include their estimated cost for food and housing when they were living in their regular home with their parents or spouse. Only those costs that were incurred in their own behalf and as a part of attending the PN program were to be included. All costs were to be costs met by the individual student and not those provided by another person. Approximately 50% of the single persons had expenses for food and housing while 38% of the married and 66% of the head of household students had individual extra food and housing expenditures while attending school. A great majority of those persons who did not report expenses also reported they were "living at home" while attending school and therefore did not have additional expenditures to be met by themselves.

All students had some "other costs". One of the larger single items in this category was extra laundry costs for uniforms while attending school. These averaged approximately $10 per month for those who used either a commercial laundry or an outside laundromat. Another type of expenditure in this category was the incidental items such as "coffee breaks", associated with attending school or travel from school to their clinical assignments. In general, these costs averaged from $10 to $13 per week. The initial costs for entering the program included an average cost of $32.50 for uniforms; books and supplies cost $35 on average.

Each student was asked to give an independent estimate of their total expenditures for attending the one-year program. The single and married students made estimates which averaged approximately $750 while the head of household group made a somewhat higher estimate of $850. One-third of the students estimated that it would probably cost them less than $500 in total to attend the program while 18% indicated it would cost them $1000 - $1500 in extra expenses for attendance.

Sources of Support While Attending the PN Program

At the second test session, the students were asked to indicate their primary source of financial support while attending the PN program and also to indicate a secondary source if they were receiving additional support from a source different from that indicated as their primary support. Since there was general agreement in the pilot testing phase and through discussions with students in the programs that the primary expenditure was that for providing food and lodging while attending the school, students were asked to indicate as primary that source which was

providing for their food and lodging. If "outside" funds were needed to give assistance in their food and lodging expenditures, that source was to be indicated as the primary source if it did, in fact, provide the majority of the funds. A total of 1159 enrolled students reported both a primary and secondary source of funds for support while attending the program. 58 students reported only their primary source of support. Table 5.2 shows the number of persons reporting both a primary and secondary source.

A total of 170 persons reported their spouse or "relative" as both the primary and secondary source of funds; 78 persons reported personal and family savings as both primary and secondary sources; 60 persons reported MDTA funds as both primary and secondary; and, 20 persons reported public aid funds as both the primary and secondary source. A total of 23 persons reported current earnings while attending the school as both primary and secondary sources of support.

Almost one-half, 46%, reported their primary source of support was from a spouse or relative. This included both the married students living in their home with a spouse and single persons living "at home." The next largest category of primary source of support was from personal or family savings with 20.1%. A total of 173 persons, 14.9%, reported MDTA funds as their primary source of support. Approximately 100 additional students, less than 10%, reported a loan or scholarship as providing the primary or secondary source of support.

Primary source of support information was known for a total of 1218 students. Among this larger group, a total of 208 students reported MDTA funds as the primary source of support. An additional 99 students listed MDTA funds as their secondary source of support. This gives a total of 307 students or approximately 22% of the total enrolled students who were receiving at least some support from MDTA funds. The figures reported in Table 5.2 are somewhat conservative where MDTA funds were concerned.

Table 5.3 gives the totals for 1159 responding students who gave each of seven categories as their primary or secondary source of support. Over 60% of all students reported their spouse or a relative as being the primary or secondary source of support. Next highest at 44% is personal or family savings. The next two categories are MDTA funds and current earnings at 23% each. Percentage do not total since many students gave two responses. These data would tend to indicate that students attending PN program, or, as an alternate, they must gain support from outside sources such as MDTA funds or through current earnings.

When the primary source of support for the graduates and dropouts were compared, the most notable difference was between the students who received MDTA funds as a primary source of support. 14% of all graduates listed MDTA funds as their primary source of support while 22.8% of all persons who dropped out reported similar funds as their primary source

TABLE 5.2: PRIMARY BY SECONDARY SOURCE OF SUPPORT*

SECONDARY SOURCE OF SUPPORT		PRIMARY SOURCE OF SUPPORT: Spouse or Relative	Personal or Family Savings	Loan or Scholarship	Manpower MDTA	Public Aid A.D.C.	Personal Earnings	Other	TOTAL SECONDARY N	TOTAL SECONDARY %
Spouse or Relative		170	76	18	51	10	30		355	30.6
Personal or Family Savings		185	78	13	28	10	41		355	30.6
Loan or Scholarship		25	17	1		3	12		58	5.0
Manpower		75	6		60	11	7		159	13.7
Public Aid A. D. C.		6	13	1	11	20			51	4.4
Personal Earnings		70	43	10	23	7	23		176	15.2
Other		3						2	5	0.5
TOTALS PRIMARY	N	534	233	43	173	61	113	2	1159	
	%	46.1	20.1	3.7	14.9	5.3	9.7	.2		100.0

*All Totals Based on Known Cases

of support. The graduates in 21.3% of the cases reported personal or family savings as the primary source of support while 16% of the dropouts reported this source. The percentages of each group reporting the primary source of support as a spouse or relative were similar, 46.6% for the graduates and 43.3% for the dropouts. These general comparisons would indicate the dropouts tended to have less personal or family financial support available than the graduates.

TABLE 5.3: TOTAL NUMBER OF STUDENTS REPORTING PRIMARY OR SECONDARY SUPPORT FROM SEVEN SOURCES

SOURCE OF SUPPORT	Number of Responses*	% of Subjects Responding*
Spouse or Relative	719	62
Personal or Family Savings	510	44
Loan or Scholarship	100	9
Manpower MDTA	272	23
Public Aid	92	8
Personal Earnings	266	23
Other	5	1

*Responses by 1218 subjects include 805 persons who gave both a primary and a secondary source of support.

Source of Funds While Attending PN School by Age Group and Marital Status

Table E.1, in Appendix E, reports additional data concerning sources of funds while attending school by age group and marital status. Where these data were known, a total of 59.4% of all students were single, 29.5% were married and 11.1% were widowed, divorced or separated; the latter group is referred to as the head of household group. Sources of funds for these comparisons were classed into personal sources, public sources and current earnings. The personal sources category included either a spouse or relative as well as personal and family savings. 39.2% of all single, 83.5% of all married and 16.9% of the head of household students reported personal sources as their primary source of support while attending the PN school. The head of household group also reported a lowest percentage that was able to utilize current earnings while attending school. They reported 5.8% in this category while the single students reported this source in 19% of the cases and the married students in 4.4% of the cases. This comparison clearly indicates that the head of household group more often required assistance from public sources to be able to attend the PN program.

The great majority of all single students were included in the 17 - 24 age group. In total, 61.8% of all students were in the 17 - 24 age group. A significant shift in the source of funds occurred across ages in the single group. In the youngest age group, 17 - 24, over two-thirds of the students depended on personal sources of support.

For those above 25 years of age, approximately one-half depended on public sources of support and an additional 25% depended upon current earnings while attending the PN program. Among the married students, the pattern of sources of support is relatively the same across all ages; 83.5% depended upon personal sources and approximately 10% depend upon public sources. For the head of household group, approximately 90% of those 44 years and younger depended upon public sources while this percentage dropped to approximately 60% for those 45 and above. Those persons 45 and above were more able to provide personal sources of support than in the younger age groups, approximately 28%.

Anticipated Financial Difficulties in Completing the PN Program

An item included as a part of the Resident Student Blank, administered at the second test session, requested the students to respond to the question: "How much trouble are you having getting enough money to make it through this school?" Five response categories were provided: No trouble; It's a little hard but I am making it okay; It's very difficult, but I can do it; It's so hard that I may not be able to finish the program; and, It's so hard I think I am definitely going to have to quit. Very few responses were received in the latter category and for purposes of analysis the latter two categories were combined. Responses to this item were compared between graduates and dropouts of the program and between the white and non-white racial categories. Table 5.4 shows the frequency of responses by these categories.

There was a significant relationship between the difficulty in obtaining funds to continue in the program and whether or not the students graduated or dropped out. The Chi-square was significant at the .05 level. The major contributor to this significance was the fact that within the dropout group fewer than might have been expected were having "no trouble" or "little trouble" while a far larger than expected number were having a "very hard time" or "such a hard time that they felt they might not be able to finish." Of the non-white dropouts, over two-thirds reported difficulties in the highest two categories while only 28% of the white dropouts reported similar difficulties. On the other hand, approximately one-third of the non-white graduates reported difficulty at the two highest levels. Only 12.2% of the white graduates reported difficulties in the two more difficult categories. Apparently, difficulty with finances was a primary reason for the non-whites to drop out, while it was much less of a reason so far as the white students were concerned.

Across all students reporting this information, N=1157, there was a highly significant relationship between difficulty in obtaining funds and race. The non-white students reported much more difficulty than the white students. The largest contributors to the significant Chi-square, a probability of less than .01, were the very few non-white students who had "little" or no "difficulty;" approximately one-half as many as expected were in these categories. In the "Very hard but I

TABLE 5.4: DIFFICULTY IN MEETING COSTS OF PN PROGRAM BY GRADUATES AND DROPOUTS AND BY RACE

Graduate or Dropout	Anticipated Difficulty in Completing: No Trouble	Little hard but okay	Very hard but can finish	So hard may not finish	Total
Grads	482	400	123	18	1023
Dropouts	61	45	21	7	134
TOTAL	543	445	144	25	1157

$X^2 = 8.85$; df = 3; $p < .05$

Race					
White	517	409	120	13	1059
Non-White	26	36	24	12	98
TOTAL	543	445	144	25	1157

$X^2 = 73.01$; df = 3; $p < .01$

will be able to finish" category, the non-white students had about twice as many responses as expected; and, six times as many non-white students as expected reported they were having "Such a difficult time that I might not be able to finish."

Additional comparisons were made between the sources of funds in the categories of personal funds, public funds, and current earnings with race and marital status. Table 5.5 shows the numbers depending upon each of the three sources of funds by race and by marital status. Based on 1315 cases where the source of funds and the marital status were both known, significant relationships were found beyond the .01 level. For the head of household group, a far higher than expected proportion of the students were dependent upon public funding sources as opposed to either personal expenses or current earnings. For the married students, a higher proportion had personal sources available and a lower than expected

TABLE 5.5: SOURCE OF FUNDS FOR PN STUDENTS BY MARITAL STATUS AND RACE

Race	Source of Funds: Personal Resources	Public Resources	Current Earnings	Total
White	818	253	111	1182
Non-White	40	65	14	119
TOTAL	858	318	125	1301

$X^2 = 70.11$; df = 2; $p < .01$

Marital Status				
Single	508	165	106	779
Married	341	35	13	389
Head of Household	22	119	6	147
TOTAL	871	319	125	1315

$X^2 = 354.37$; df = 4; $p < .01$

proportion were dependent upon public funding sources and a smaller than expected proportion were financing their program through current earnings. For the single students, a higher proportion were financing their program through current earnings and a lower proportionate number were dependent upon public resources.

A highly significant relationship, Chi-square significant at less than the .01 level, between source of funds and race was found. The largest contributor to this significance were the non-white students who utilized personal funds, only approximately one-half as many as might have been expected were able to finance their schooling through personal sources. Also, the non-white students who relied upon public funds for support were over twice as many as would be expected.

As indicated in an earlier section, the practical nursing programs were placed in categories from high to low according to the percentage of students who dropped out prior to completion of the program. Three of the five schools in the highest dropout category, approximately 52%

dropouts, were funded under MDTA funds. 32% of the students attending all schools which had the highest dropout rate listed MDTA as the primary source to financial support while attending the program. An additional 6.6% listed MDTA as their secondary source of support. By comparison, students in the lowest dropout category, 5.3% to 2.6% dropouts, had only 13% of their students who depended upon MDTA funds for support. All five schools in this lowest dropout category were located in the State of Iowa. Since there are no programs supported directly under the MDTA funds, the students enrolled were supported as individual students rather than support for the entire program. These differences in percentages of dropouts by school and MDTA support for programs or by individuals should probably not be interpreted as meaning that similar students attending the Iowa schools with individual support had an overall better record of completion than programs operated under MDTA funds in Illinois. Other data would indicate that a high proportion of all students admitted to programs supported by MDTA funds would not have been admitted to the programs in Iowa, even though MDTA funds for such individuals may have been available. Selection criteria used by the Iowa schools and the policies of the Iowa Board of Nursing would have prevented many from being admitted.

Of the three categories of schools in the middle dropout ranges, approximately 14% of their students received MDTA funds as their primary source of support.

Another index of financial ability while attending a PN school was indicated by the differences in the percentage of students who indicated the availability of personal or family savings as a primary source of support. In those schools that had the lowest dropout rate, a total of 29% of the students indicated personal savings as a primary source of support while attending the PN program. In comparison, only 11.3% of all students in the highest dropout schools reported personal savings as a primary source of support.

Summary

Across all comparisons a central finding was that the non-white students were having far greater difficulty in financing their program even though proportionately a greater number of them were dependent and received public resources or gained current earnings to maintain themselves while in the program. On the other hand, the white students had far less difficulty in financing their program and more often were able to rely upon personal and family sources for meeting their expenses.

The very low number of scholarships and loans did not provide a meaningful basis upon which those with financial needs might gain assistance while in training. It would appear that there was a large pool, particularly of non-white students, in all marital status categories, who would be able to successfully enter and complete the PN program if outside sources of support were available while attending the program.

Choice of, Enrollment in and Satisfactions With the PN Program

A number of items were included in the second test session, primarily through use of the Resident Student Blank, to gain impressions, satisfactions and other reactions of the students in selecting their PN program, in finding housing and entering the program. The following sections will deal with selected areas from this instrument and other information obtained by the PNS staff. Tables E.2 and E.3 contain related data.

Counseling and Selection of a PN Program

Items were included to gain information from the students concerning the role of counselors in the selection of PN schools. 1148 students responded to the item asking whether or not they had visited with a counselor about the possibilities of attending the particular school in which they were enrolled. 51.2% had visited with a counselor of some type. 32.9% of the students had visited with a school counselor before entering a practical nursing program. A significant difference was found between Illinois and Iowa. In Illinois, 26.4% had discussed practical nursing with a school counselor while 43.1% of the Iowa students had held such discussions. This difference might be expected since the Iowa counselors' associations and groups had been well informed concerning practical nursing while relatively little activity had occurred in the State of Illinois. Also, a much greater percentage of the Iowa students were enrolling immediately after completing high school while the Illinois students were an older group and many had completed high school prior to the time that practical nursing was well known and understood.

A total of 16.4% of all students had discussed entering practical nursing with a state employment counselor. Again, there was a large discrepancy between Illinois and Iowa; 22.7% of the Illinois students had talked with an employment service counselor while only 6.5% of the Iowa students had such discussions. Again, this discrepancy is reflective of the difference in the characteristics of the students entering the programs in the two states and the larger percentage of students in Illinois who received support under MDTA provisions.

Another item asked the relatively simple question of whether or not there had been a guidance counselor in the high school where the student had last attended. Approximately 65% of the students in each state reported that there was a guidance counselor in their high school. Although this percentage appears quite high, other evidence would indicate that there were persons "designated as guidance counselors" in almost 100% of the schools the students had last attended. After allowing for the fact that a number of students would have completed high school or had their last high school attendance several years prior to entry, these data would indicate that the role and purpose of the guidance counselor was not adequately understood or utilized by students. The counselors apparently were not effective to the point that students needing services availed themselves of such services.

Those students who indicated that there was a counselor in the high school they last attended were then asked to indicate the kind of information he provided to them concerning schools of practical nursing. Across the two states, 54.9% indicated that they had discussed attending a practical nursing school with the guidance counselor. However, there was a wide difference between the two states; 45.3% of the students in Illinois had discussed practical nursing while 69.5% of the Iowa students had such discussions. 38% of the Iowa students who had discussions with a counselor were generally encouraged to attend a practical nursing school, while 25.8% of similar students in Illinois were so encouraged. 17.5% of this group of students in Illinois discussed specific PN schools but were neither encouraged nor discouraged concerning attendance, while 28.1% of the Iowa students had similar experiences.

Of the 1151 students where the information was known, 43.9% had considered attending some PN school while in high school. 52.6% of the Iowa students had given consideration to attending some PN school while in high school while 38.4% in Illinois had given consideration to some PN school. 31.6% of all students had given consideration to the school in which they were enrolled..

An additional question was utilized to determine when the students made their final decision to attend the particular school. 28.2% of all students indicated that they had made the decision to attend the particular school while still in high school. Again, the Iowa students were far more likely to have made the decision while they were in high school, 39.2% compared to 21.1% in Illinois.

Reactions to the Practical Nursing Program After Enrollment

During the second testing session the students were asked to respond to an item, "Now that you are here, what do you think of this school?" See Tables E.2 and E.3. Responses to this item were available from 1155 students. More of the Iowa students reported that the school was about what they had expected, in 54.3% of the cases, while the Illinois students reported a similar response 43.9% of the time. The Illinois students showed more of a range in meeting their expectancy, 47% rated the school better than they had expected and 9.4% indicated the school was not as good as they thought it would be. Among the Iowa students, 40.6% reported that it was better than they thought it would be, while 5% thought it was not as good as they thought it would be. In general, data concerning expectancy and actual impressions would indicate that the Iowa students found a situation more similar to what they had expected than the Illinois students. Overall there is a high degree of satisfaction where over 40% of the total students found it better than they had expected, approximately 50% met their expectances and relatively few, 7.7%, found the situation not as good as they had expected.

To gain a measure of general satisfaction with their program the students were asked how they would rate the particular school in

which they were enrolled "If a good friend of yours still in high school asked you for a frank and honest opinion." Approximately 28% of all students rated the school as "Very high; I think it is among the best in the country." An additional approximately 50% rated their school of attendance "Above average; it's better than most." Approximately 20% rated their school as average. Less than 2% indicated that they would rate their school as below average or very low. These ratings would indicate a very high degree of satisfaction at the time of the second session.

The same question concerning the rating of the school was repeated at the last test session, during the last month of attendance. At the final session, the students still rated their schools quite high. However, their evaluation decreased somewhat from that given at the second session. At this session, 9% of the Illinois students gave their school a rating of below average or very low while less than 4% of the Iowa students gave their school a similar rating. 20.1% of the students gave their school a very high rating with 27.8% of the Iowa students giving this rating and 20.3% of the Illinois students giving a similar rating. Almost half, 47.0% of the Iowa students still felt their school was above average while 44.4% of the Illinois students gave a similar rating. 26.3% of the Illinois students and 21.5% of the Iowa students felt their school was average.

The students at the final test session were also asked to rate how they felt their instructors would rate the school. In general, the students felt that their instructors would rate the school somewhat higher than the students had rated it themselves. In Iowa 41.5% of the students thought the instructors would rate the school very high and 53.8% would rate the school above average. The comparable figures for Illinois in the students' opinion were that the instructors would rate the school very high in 23.7% of the cases and above average in 51.5% of the cases. In Iowa, 75% of the students had rated their school as above average or very high, but they thought that 95% of the instructors would have rated the school in these two categories. Illinois students had a similar discrepancy of approximately 20% in their response; that is, 65% of the students had rated the school very high or above average but in 85% of the cases thought that the instructors would rate the school very high or above average.

At the second session students were asked for their estimate of being able to get a job when they had completed the practical nursing program. In general the students seemed quite confident about their chances of obtaining a job in the field when they completed the program. 34% of the students in Illinois and 28.5% of the students in Iowa stated that they already knew where they would be working. 48.5% of all students, in Iowa 58.7%, felt that their chances were quite good in obtaining employment as a practical nurse since the school had a good record of placing their graduates with little or no trouble. Approximately 10% of the students in each state indicated that they did not

know what their chances were of obtaining employment and had not discussed the possibility with persons at the school. According to the faculty at the various schools, no student had failed to be employed after completing the programs if the student actually desired to be employed. Most could be employed within an area close to their choice. Many of the students planned to gain employment as a practical nurse at the same location where they had been employed previously while working as a nurse aide.

Transportation and Housing

Items included in the Resident Student Blank were utilized to determine the nature of the housing and transportation arrangements by students while attending the schools. 29.6% of all students lived with their parents. 22% indicated that they lived in a house that they owned and 17% indicated that they had rented an apartment. Housing operated by or associated with the school provided the residence for 11% while a similar number were renting a room while attending school, and 5% were living with relatives. A larger number of the Illinois students, 34.4%, were living with their parents, and a higher percentage of the Iowa students, 17.9%, lived in housing associated with the school. 8.8% of the students attending Illinois schools had been assisted in obtaining housing while 27.2% of the students in Iowa had received similar assistance. In Illinois, 82% of the students indicated that they already had a place to live when they chose the school while Iowa students gave a similar response in 63% of the cases. Only 2.3% of the students indicated that they had difficulties in finding a place to live while attending school.

Approximately 86% of all students indicated they were "satisfied" or "very satisfied" with their housing arrangement while attending school. 11% indicated they were "somewhat dissatisfied" or "not what they had hoped to find" while they were attending the school. 39% of the Iowa students and 21% of the Illinois students lived less than one mile from the place they attended school. This may reflect those numbers that lived in school associated housing. Somewhat less than 25% of all students lived 15 or more miles from the school.

30% of the students had attended high school in the same town in which the practical nursing program was located. In addition, 21% had last attended high school less than 25 miles away, and 18% had attended a high school 25 - 50 miles away. The majority of the movement had been from small or rural high schools to a larger town where the practical nursing program was located. 31% of the students had attended a high school 50 miles or more from the practical nursing school attended. Many of the latter group were older students; also included were those who had moved to Illinois from the southern states.

The practical nursing students appeared to be drawn disproportionately from smaller towns. 17.9% of all students had lived in a rural area or in a town of less than 1000 population while attending high school. 23.6% had lived in a town of between 1000 and 5000; 12.5% had lived in a town of 5000 and 10,000, and 9.7% had lived in a town between 10,000 and 20,000. Over three times as many students had lived in towns under 5000 than would be expected from the distribution of the U.S. population--or the Illinois and Iowa populations.

School Policies

A series of three items was included in the questionnaire to determine the policies of the school and the student's knowledge and reaction to the policies. A total of six responses to each item were available, one of which was the response "I don't know." Items required responses to "What happens if you are late to school" and "What would happen if you are often late." Other questions concerned the situation where the student was sick and could not get to school and where the student had "skipped" school for one day or more. In response to the question of what happens if "you" are late, skip or were sick, the Iowa students responded in 42 to 56% of the cases that they "did not know" what would happen. In contrast, 30% or less of the Illinois students gave similar responses to these questions. Responses were consistent to indicate that if they had missed work, then it was necessary for them to make up that work. This was true in all cases whether a student had been absent without reason or whether they had been ill. Responses to being late on an "often" basis showed that over one-third of the students in Illinois were aware that they might "be put out of school" while very few Iowa students gave similar responses. In the case where a student had missed school due to illness, 42% of all students reported that they would have to make up the work, but an instructor would give assistance in making up the work. Apparently, as a general pattern, the students in the Illinois schools were made more aware of the policies and rules and give definite responses concerning make-up work and potential penalties. It may be that the students in Iowa did not give as much consideration to possibly skipping or being late.

Difficulties of Studies at the PN School

The students were asked how hard they had to study at the PN program in order to be successful in the program. The questions used formed a series concerning different aspects of the program. See Tables E.2 and E.3. When asked a general question of how hard they had to work, somewhat over 47% of the students in each state indicated that they had to "work hard almost all of the time." The Illinois students reported in 29.8% of the cases and Iowa students in 38.4% of the cases that they "had to work hard about half of the time." It may be somewhat of a reversal to find that approximately 9% of the students in Iowa indicated that they had to "work hard at least half of the time" in addition to those who "worked hard all of the time" when the general ability measures of the Iowa students showed them to be higher in achievement and ability than the Illinois students. Since there were no significant differences in scores on the

state licensure examination or other measures, a precise explanation is difficult. It may be that the differences were in the judgements made by the students as opposed to the actual difficulty of the programs.

The students were then asked to compare the amount of effort they expended in studying in the PN program to the amount of effort they had expended in high school. 63% of the Illinois students and 73% of the Iowa students indicated that they studied "harder" in the PN program than they had in high school. Additionally, 26% of the Illinois students and 20% of the Iowa students indicated that the difficulty of studies were "about the same as high school."

Approximately 55% of the students in each of the two states reported that they always had to study outside the school day. Approximately 8% of all students indicated that they "sometimes had to study outside the school time but not very often." The remaining approximately 35% of the students indicated that they "usually studied outside school." The amount of time spent studying ranged from one to two hours per day.

When asked to indicate the biggest difference between the practical nursing school they were attending and other schools they had attended in the past, the most common response, in approximately 45% of the cases, was that at the PN school they could study primarily what they needed to know. 20.5% of the Illinois students and 15% of the Iowa students indicated the greatest difference as being the possibility of getting a job when they had completed the program. In addition, approximately 25% of the students in each state indicated that the major difference in this program was that they could not get similar kinds of programs in the regular school program.

To determine the students' confidence in being able to complete the practical nursing program, an item relative to this situation was included at session two. Students in both states had a high degree of confidence that they would be able to finish the program. Somewhat over one-third thought that their chances were "excellent" and were sure that they would finish while an additional 54% felt that their chances were "quite good" of finishing. Approximately 9% felt that their chances were "fair." Only about 1% in each state thought that they "would probably not be able to finish" or "were giving consideration to quitting."

The students were asked how much of what they were learning at the school was new information for them. See Tables E.2 and E.3. Approximately 15% in each state reported that all of the information was new to them. Slightly under 60% of the Illinois students felt that most of it was new while approximately 65% of the Iowa students had a similar feeling. Approximately 21% felt that about half of the information was new and about half was information with which they were already familiar. These data were also analyzed according to whether or not the students had had prior health occupations experiences. Data showing the responses are included in Table E.2. Of those persons who had been employed as a nurse aide, 52.6% felt that most of the material was new while 14.4%

felt that all of the material was new and 16.9% felt that about half of the material they were learning was new. It is interesting to note that those persons who had no prior health occupations experience reported percentages in the "all new" and "most new" category very similar to the persons who had had employment as nurse aides.

Interest in PN as an Occupation

Students at the second session were also asked to indicate on a 5-point scale the degree of their interest in the occupation for which they were undergoing training. 72.7% of the Illinois students and 66.7% of the Iowa students indicated that they were "Very interested; It's exactly what I want to do for a living." Of the remaining students, all except 1% indicated the second highest level of interest on the scale by indicating the response, "Interested; I think I will like it more than most things I might do." Inclusion of the same item at the third test session, immediately preceding the end of the PN program, were quite similar to the responses at the second test session. 96% of all students indicated that they were very interested or interested in the occupation. A similar item was included on the follow-up questionnaires to both the graduates and the dropouts. There was somewhat of a decrease in the level of interest reported by both the graduates and the dropouts. This was not particularly unexpected since the ratings during the second test session were so high that very little increase could have been obtained. A correlation between the responses by individuals at the second test session and on the follow-up questionnaire showed a correlation of r = .470 for the graduates and an r of minus 1.6 for the dropouts. However, a large majority of the dropouts continued to express a high interest in becoming a PN on the follow-up questionnaire.

The dropout follow-up questionnaire repeated the question of "how interested are you in becoming a PN." Responses to this item were received from 190 of the 294 dropouts on the follow-up. 114 of the 190 expressed the highest level of "very interested;" 43 said "interested" and only 13 reported "little or no interest." Even assuming all non-respondents would have expressed "no interest," over one-half, 53.4%, of all dropouts continued to express a strong continuing interest in completing a PN program. This high level of interest was expressed by declining percentage at schools across the completion index categories. That is, of those where responses were known, there tended to be a higher percentage of those who remained interested in the lower dropout schools than in the higher dropout schools. However, 82.5% of all respondents reported they remained "interested" or "very interested."

When a student dropped out of a school, the school completed a form to inform the PNs of the reasons for dropping out. The dropouts were also asked their reasons for dropping out on the follow-up questionnaire. Many dropouts did not respond to the questionnaire or to this item. Therefore, only general interpretations can be made from the available data. There is a high discrepancy between the

dropout responses and the school responses, particularly for the higher dropout rate schools. In the highest dropout group, only 12 of the 54 cases, where both responses were available, agree on who initiated the action leading to withdrawal. The dropouts were most likely to say the school initiated the action while the school report indicated the student had initiated the action. There was an increase in agreement on who initiated the action across the completion index categories with the highest completion group showing agreement in five of the six known cases. A partial explanation of the discrepancy for the high dropout schools is the fact that most of the MDTA sponsored programs were in these categories; in the students' thinking they referred to both the actual PN program and the funding relationships handled by the employment service as "the school."

A second aspect is more important and far more difficult to evaluate with precision or to support with "hard data." The following description is based on many observations and discussions at many locations both as a part of the PNS and independently. It is difficult to identify in many cases whether the student or some faculty member actually initiates the action for a student to discontinue his program. Faculty members and administrators have learned through some difficult experiences that they must have information or data of record to support dropping a student from a program in case the student chooses to protest the action. On the other hand, the faculty must make a judgement and recommendation that each graduate is qualified to practice practical nursing before he is permitted to sit for the licensure exam. In some cases they are faced with the untenable position of not being able to make a favorable recommendation in their best judgement but have inadequate data to support their position.

In the field of nursing education the stigma of having any graduate fail the licensure examination has become so distorted that the school's approval may come under question as a result of a very few failures. The scores on licensure exams are pointed to with extreme pride and as evidence of a quality program. These factors have led to practices which are highly detrimental to both individual students and the public's return on its investment in the school. Selection criteria for students are raised well above that required to meet minimum quality standards for practical nursing. These students then score quite high on cognitive exams such as the licensure exam. However, many potential students who could become quality practitioners are denied the opportunity to enter a program. In addition, in too many cases, when it appears that a student may not be able to pass the licensure exam, it may be made known to them in "informal" ways that they might discontinue their program. "Pushouts" and "dropouts" cannot always be distinguished; the discrepancy in the responses to "who initiated the action" to discontinue the student's program may be a fair measure from each respondent's view. The student may have taken the "formal" action after some "informal" action had been indicated by a school representative.

It must be stated that in most schools and for the great majority of all staff members included in this Study, all actions and judgements were given full consideration and all persons with responsibility within the PN program made every attempt to come to a fair decision in the interests of the individual students and nursing, as those persons saw those interests. They took their responsibilities quite seriously.

Student Impressions of the Staff and Instruction

At the final test session students were asked to indicate how interested they thought their instructors were in teaching practical nursing. See Tables E.2 and E.3. Of the 1029 students responding to this item, 36.3% indicated that they thought their instructors were "very interested" in teaching in the PN program. By states, 42.7% of the Iowa students and 31.8% of the Illinois students classified their instructors in this category. 54.9% of the Illinois students and 48.3% of the Iowa students felt that their instructors were "interested," and 11.4% of the Illinois students and 7.6% of the Iowa students thought that their instructors were "mildly interested." Less than 2% of the students in either state indicated that their instructors had "little or no interest" in teaching in the practical nursing programs. Since approximately 100 students who completed the instruments at this session did not respond to this item, it might reasonably be expected that a somewhat higher proportion of this group would have given their instructors lower ratings. Consequently, the percentage of favorable responses may be somewhat higher than actually existed. However, since 910 students rated their instructors as "very interested" or "interested," the two highest categories, over 85% of all students felt that their instructors had a high interest in teaching in the practical nursing program.

The students were asked to give their estimate of the knowledge their instructors had of the content and practice they were teaching in the practical nursing program. At the second test session, approximately 40% of the students in each of the two states indicated that their instructors "always knew what they were talking about." Almost 60% of the students responded that "they usually know what they are talking about." The same item was repeated as part of the final test session. On the final rating scale 27% of the Illinois students and 23% of the Iowa students rated their instructors in the "highest category," "always know." 70% of the Illinois students and 76.6% of the Iowa students rated their instructors in the "usually know" category.

As a part of the broader question, the students were asked for their impressions of how the instructors would rate themselves on the "knowledge" scale. In each state, the students responded that they thought the instructors would say they "always know" in approximately 30% of the cases and would rate themselves as "usually know" in approximately 68% of the cases. In each case the students responded in a pattern that would indicate they felt the instructors would rate

themselves somewhat more knowledgeable than the students had rated the instructors. However, it should be noted that their responses were very similar.

Approximately 30% of the Illinois students and 25% of the Iowa students felt that their instructors could "always answer their questions in a fashion that the students could understand." Approximately 70% of the students indicated that their instructors could "usually answer" their questions in a way that they could understand.

As a part of the faculty evaluation, as reflected by student impressions, 38% of the Illinois students and 33% of the Iowa students felt that their instructors were "real experts" at doing the job that they were attempting to teach. 59% of the Illinois students and 64% of the Iowa students felt that their instructors were "better than average but not necessarily experts." Somewhat less than 3% of the students in each state felt that their instructors "can talk about the job better than they can perform it." The same item was repeated at the final test session. At this time, both the Illinois and Iowa students' judgement of their instructors had shifted downward somewhat. The students rated their faculty members as "experts" in what they were doing in somewhat over 20% of the cases which was a drop of 9% from the second test session. However, 73% of the students rated their instructors as "better than average but not necessarily experts." 6.8%, slightly higher in Illinois than Iowa, indicated that they felt their instructors "could talk" about the performance better than they could actually do the job.

During the same time the students' judgement of their instructors was reduced somewhat in terms of being "experts," they indicated an increased level for their instructors' ability to demonstrate the type of activities they were teaching. It was the students' impression that the instructors would rate themselves as better than average but not necessarily experts in demonstrating what they were teaching.

This series of items would indicate a high respect of the instructional staffs throughout the training program. The shifting from the higher rating as "experts" to the "better than average" from the middle of the program to the end of the program may very likely be due to the students being better able to actually judge quality performance as a result of their preparation.

The students were asked to indicate how well they thought their instructor knew them as an individual at both the second and final test sessions. The responses of the students in Illinois and Iowa were quite similar during the second session. Approximately 20% felt that "all of the instructors know me well." They felt that "most of them know me well" in approximately 42% of the cases, while approximately 23% of the students felt that "most of them <u>don't</u> know me well."

Approximately 12% of the students reported that about half of the instructors knew them well and about half did not. Slightly fewer students felt that the instructor did not know them well at the time of the third session.

There were some differences by size of program in the responses to the degree to which the students felt the staff knew them. In the large programs with multiple phases and locations, a higher percentage of the students reported that some knew them well and some did not. Approximately 50% of the students in each state indicated that they felt most of the instructors knew them well while approximately 20% of the students in each state reported that they felt most of the instructors did not know them well. Although there was a shift to feeling that the instructors had a better knowledge of each of the respondents as individuals, there was a sizable proportion that felt most of the staff did not know them well or that only a part of the staff knew them well. It is quite possible that the expectances of the students increased during the intervening time. Approximately 1030 students responded to this item at the final session, indicating that very few students failed to respond to this item or were hesitant about giving their views. In the students' views, they felt that the instructors would respond to similar items showing that approximately 30% of the faculty members felt that all faculty members knew the students well and approximately 48% would respond that most of the instructors knew the students well. In total, 67% of the Illinois students responded that they felt the instructors would indicate that most or all the instructors knew their students well and 73% of the Iowa students' perception was that their instructor would report that all or most of the instructors knew the students well.

In general, the students in both states had a very high opinion of their instructor's ability as teachers. They indicated that their ability to learn from the faculty was "very high, some of the best teachers I have ever had" in approximately 23% of the cases. An additional approximately 50% of the students indicated that their ability to learn from their instructors was "high, better than average teachers." By the final session the students rated their instructors as "some of the best I have ever had" in approximately 15% of the cases and "high, better than average teachers," in 39% of the cases in Illinois and 49% of the cases in Iowa. Instructors were rated as "average" in 39% of the cases by Illinois students and 34.7% of the cases by Iowa students.

The students felt that the instructors would rate themselves somewhat higher than the students had rated them. Approximately 6% of the Illinois students and 2.5% of the Iowa students felt that their instructors were "below average," but they did not feel that the instructors would rate themselves in this category with the exception of less than 1%.

Approximately 75% of the students indicated that they felt they were "qualified" to make the judgements concerning the teaching ability

and the technical competencies of the staff members. Approximately 10% felt that they were "not very well qualified" and an equal number felt that they were not "qualified" to make these judgements. The Illinois students indicated that they had more confidence in their qualifications for judging the quality and ability of the instructors than the students in Iowa.

Student Impressions of the School Equipment

Questions to determine the student impressions of the condition and nature of the equipment used at the PN school were included in both the second and final test sessions. As far as the age of the equipment was concerned, the students at the second session felt, in approximately 60% of the cases, that the equipment was about half new and half old. The Iowa students felt in 35% of the cases and Illinois students in 25% of the cases that the equipment was mostly new at the second session. Approximately 85% of the students felt that the equipment was mostly in good working condition at the second session. They also felt that the instructors would judge the equipment to be in a similar condition to what they had judged.

By the final test session, after the students had served their clinical experiences in a number of locations, their judgements of the newness and working condition of the equipment dropped somewhat. At this session, approximately two-thirds of the students felt that the equipment was mostly in good working order. Approximately 25% of the respondents indicated that the equipment was about half in good order and half in poor order. So far as the variety and types of equipment were concerned, somewhat over 60% of the students in each state felt that they had most types of equipment but were missing some makes or models within the school preparation program. Another 20% felt that every type of equipment they needed to use was available.

In approximately 60% of the cases the students indicated they felt there was "plenty of equipment" or "usually enough equipment but with sometimes short waits for use of particular items." 24% of the Illinois students and 36% of the Iowa students felt that there was often not enough equipment for all. In general, the students did not rate the amount of equipment as high as they had at the second session. Approximately 65% of the students felt that there was enough space and working area around the equipment and laboratories used within the school. The remainder indicated that there was some crowding and in 15% of the Illinois schools and 6% of the Iowa schools the students felt that it was too crowded most of the time. The students indicated that they felt qualified to make judgements concerning the equipment condition and use in their programs, in 75% of the cases in Illinois and in 65% of the cases in Iowa.

Generally speaking, the students rated the condition, amount and use of the equipment as well as the space and availability of the equipment

to be quite favorable in most cases. The responses which indicated the existence of poor conditions generally were reflected at some individual schools rather than by any one type of program. It was recognized by the faculty in a few schools that they were in temporary quarters or in a situation that would be improved.

Additional Comparisons of Satisfaction and School Related Items by Other Variables

In addition to the one-way comparisons and totals reported in the prior sections, additional comparisons were made with selected satisfaction items and ability levels, by responses from schools in the various completion-dropout categories, amount of prior health experience and age groups. The comparisons reported in this section are based on data obtained at the second test session. Data are presented in Tables E.2 and E.3. At this time, approximately 54% of the total of 294 dropouts had already left the schools. The maximum number of responses possible for the students in school at that time was 1162 and 135 students or 11.6% of this group would drop out prior to the completion of their program. Therefore, the responses made by the dropouts in this particular section are based on the students who remained in the program longer than the majority of all students who dropped out.

Approximately one-fifth of the high ability students stated that they did not have to work hard but were kept busy. 12.5% of the low ability students gave a similar response. Almost one-half of the total group, 47.3% felt that one needed to "work hard almost all the time" to get along. The lower ability students reported that they had to work hard almost all the time in 54.8% of the cases. Students in the lower ability group more than the students in the upper ability group tended to think that the equipment in the school was more limited and with particular types of equipment missing. Students in the high ability group also responded somewhat more frequently that they did not feel sufficiently qualified to evaluate the adequacy or condition of the equipment as used in the schools.

There were no differences in comparisons of the upper, middle and lower ability students in their responses to being satisfied with the amount of knowledge the instructors had or the ability of the instructors to demonstrate in teaching that knowledge. The high ability students in the schools with the highest dropout rate felt more often that the instructors "always knew" what they were discussing than did the middle or lower ability groups in the same schools. Across the ability groupings the students felt equally that the instructors knew them quite well. The low ability and middle ability groups of students in the highest dropout rate schools tended to respond more often that the instructors did not know them well as compared to the students with higher ability in the same schools.

Students who had had prior health experiences, such as a nurse aide,

felt that they needed to work or study as hard as those students who had not had prior health occupations employment experience. Students in both the older and younger age groups equally felt that the program kept them busy and that they had to work hard. Students in the 30 - 34 age group more often responded that they had to work about half of the time and proportionately not as many students in this age group felt that they had to work hard almost all the time as compared to other age groups. 12% more of the dropouts felt that they had to work hard almost all the time as compared to those students who graduated.

Students who had had prior health occupations experiences and those who had not had such experiences held very similar views in relationship to their opinion of the instructor's knowledge of the content they were teaching. By age categories, the 55 and over and the 25 - 29 age groups were less likely to rate their instructors as "always knowing" what they were talking about and more often indicated that the instructors "usually knew" what they were talking about than the other age group. The graduates and dropouts did not differ in their responses when evaluating the instructors' knowledge of the material they were teaching.

Students who had not had prior health occupations experiences felt that the instructors knew them as well as the students who had had such experiences. Those students who had been candy stripers were most likely to respond that their instructors did not know them well. Except for those students who had been candy stripers (all were 24 years of age or younger), the older students tended to feel the instructor did not know them as well in comparison to the responses of the younger students.

A significant difference was found between the responses of the dropouts and the graduates; 35.5% of the dropouts compared to 22.3% of the graduates felt that the instructors did not know them well.

All students were quite favorably impressed with their instructors as teachers. No differences were found between those with and without prior health occupations experience, although those persons who had had adult health volunteer work were most likely to indicate either that the instructors were the best teachers they had ever had or in the other extreme, to rate their instructors as below average teachers.

Responses to this item by age groups showed some relatively minor differences. Again, the 55 and over and the 25 - 29 age groups were the more likely to rate the instructors as below average. The students in the 35 - 39 age group, proportionately, rated their instructors better than did the other age groups. The graduates were more likely to rate their instructors "high" than were the dropouts; however, only 3.7% of the dropouts felt their instructors were "below average" as teachers.

The findings reported in these paragraphs must be interpreted with caution since the great majority of all students felt their instructors were "well above average" or "the best that they had ever had."

Although the great majority of all students rated their schools as "above average" or "very high," the individuals who had not had prior health occupations experience and those who had been candy stripers were the ones more likely to rate the schools as "average" rather than in the higher categories. Those persons who had worked as adult health volunteers tended to rate the schools the highest of all those with prior health occupations experiences. There were small and few differences in the ratings given by the dropouts and the graduates concerning the ratings of the school.

Some additional analyses were performed to attempt to identify some of the potential differences between those schools who had high dropout rates and low dropout rates. The schools were classified by the completion index as reported earlier. The schools who had the highest dropout rate offered their first week of patient observation from the first through the fifth week with the mean occurring during the third week. A similar range and mean was found for each of the other completion categories.

Those schools which gave the first patient observation experiences from the sixth through the fifteenth week tended to have a slightly higher rate of dropouts than those schools who had the first observation and patient contact between the first and fifth weeks. A similar trend was found for the earliest time of direct patient contact experience. Schools which provided the first patient contact during the first through the sixth week tended to have a somewhat lower dropout rate than those schools which provided direct patient contact for the first time later in the program.

Differences among the schools with the differing dropout rates were examined for the proportion of students who had prior health occupations employment experience. Although there were slight differences from group to group and school to school there were no consistent or significant differences relating prior health occupations experience and dropouts by school categories.

Summary

Analysis and interpretation across several variables having to do with the students' interests in attending a practical nursing program, their satisfactions in the program as it met their expectancies, and their judgements concerning the ability of the faculty members as instructors and as instructors who knew the students as individuals revealed a quite high level of satisfaction by the students. Apparently, the students found at the school the type of program they expected to find or more often a somewhat better situation than they had expected rather than one not as good as they had expected.

They rated the faculty members as teachers and as professional practitioners quite high and felt that they were very able to demonstrate the content and technical procedures required. They felt that their

ability to learn from the instructors was quite good. In addition, they felt confident that they would be able to obtain employment in the occupation once they had completed the program.

Although there were some differences in student satisfactions between the two states, therefore indicating some differences by type of program, they were of a relatively minor nature. The PN students appeared to be a group who had found the type of preparation program in an occupation where they had high interest and were able to gain a high quality of instruction, in their judgement.

The major differences found in these analyses concerned the source of financial assistance and the ability to finance the PN program. Young single students and white married students living with their spouse relied primarily on personal and family resources and had relatively little difficulty with finances. Older single students, heads of household and non-whites in most groups had much greater difficulty and relied on MDTA and other public resources to be able to attend. Many could not maintain attendance, for financial reasons, even though provided public resources.

Many students were admitted to PN programs in Illinois and provided public resources as a primary means of support who would not have been admitted to the Iowa schools. Although this group had a proportionately higher dropout rate, the majority successfully completed the preparatory program and accepted employment as practical nurses. It would appear that the total investment is more than repaid by those who completed. In addition, it is reasonable to speculate that with additional assistance in finance and educational improvement activities, a higher proportion would have been successful.

CHAPTER VI

EMPLOYMENT AND PREFERENCE FOR EMPLOYMENT OF GRADUATES AND DROPOUTS

The data reported in this chapter are drawn from information obtained at the first, second, and final test sessions, as well as through follow-up questionnaires to both graduates and dropouts. In some cases similar items or questions were included at more than one session to gain measures of change across time. Since the number of responses available for each of the data collection activities differ, the reference data upon which the results are based will be made known in each section.

As reported in earlier sections, a total of 1350 students enrolled in the 45 schools. A total of 1056 students graduated for a percentage of 78.2. In Iowa, 89.6% of the students graduated, and 71.8% of the Illinois students graduated.

At the time of enrollment, a total of 629 students were single, 315 were married, 106 were heads of household, 3 were nuns and 3 had an unknown marital status. At the time of follow-up, 204 of the single students had married. In addition, 6 of those who were widowed, separated or divorced upon entering the program had remarried.

During this same time period, 215 of the graduates had gone through pregnancy and had at least one child. While 611 were still childless, the total number who had no children at entry to the program was decreased by 78. The increase in the number of children was primarily by those PNs who previously had 1 or 2 children. At the time of follow-up, 104 PNs had 1 or more children under 6 years of age; the majority, 82 of the 104, had 1 child under 6.

813 of the graduates had been employed on only one job from the time of completing the PN program and the completion of the follow-up. This was a period of up to 13 months. Of the remaining where data were available, 92 had held 2 jobs, 11 had held 3 jobs, and 3 had held 4 jobs. Of the total graduates, data were not available on 23 cases. Attempts to gain additional information were made through phone calls to the coordinators of the PN programs; they were able to provide some information relative to employment. 7 of the graduates had moved out of the states in which they received training. Each had gone to a different state.

In the intervening period from completion of the PN program and the time of follow-up, 978 of the 1056 students had successfully passed the state licensure examination. Five had passed their initial licensure examination in a state other than Illinois or Iowa. Of the remainder: some had not attempted the licensure examination; and, some of those who had attempted the licensure exam and failed, were planning to retake the exam at a later time. Of the total students completing their PN program, 845 were employed full-time as a LPN and an additional 8 were employed as a LPN part-time; only 2, where the information was known,

were employed in a non-health job. Some had continued to further education.

The median salary for the employed PNs was similar, but somewhat higher than that obtained and reported in Occupational Patterns and Functions of Employed Practical Nurses. The salary data suggest that the LPNs had improved salary ranges and medians from 1966 until 1968 when the primary follow-up data were obtained. Also, the salary data reported by the graduates would necessarily be at the entry level or beginning salaries. Of the 890 cases where salary information was known at follow-up, 58% of the total were being paid between $75 and $100 per week. Approximately 15% were being paid $100 to $150 per week, while slightly more than 15% were being paid between $50 and $75 per week. There were relatively wide variations in salary according to the geographic area of employment. The highest salaries were paid in the Chicago metropolitan area. These salaries compare with the salaries determined in the occupational patterns and functions phase of the Study where the most common range was $278 to $345 per month.

Employment of Graduates Before and Following PN Training

During the time immediately preceding the enrollment in the PN school, approximately 90% of all students who desired employment were employed. A total of 271 students held the same job while they were attending the practical nursing program as they held immediately precedin entry. A total of 6.8% reported that they were unemployed and seeking employment immediately preceding entry, while 2.0% considered themselves to be full-time housewives. It must be kept in mind that approximately 25% of the students completed high school the previous spring so that their employment would have been of a short-term type.

A series of items were included at the second test session to determine the number who were unemployed and the use of the state employment services. Of those unemployed during the period of time prior to entry into the practical nursing program, a total of 89 students were registered with a state employment service as a job seeker. In addition, a large number of students, somewhat over 300, had been in contact with a state employment service concerning entry into a training program or in seeking employment. A total of 381 persons reported that they had "at some time" been registered with the state employment service as a job seeker. 72% reported that they had never registered with a state employment service; 22% of the students did not respond to this item. The students in Illinois were proportionately more likely to have registered with the state employment service as a job seeker than the students in Iowa.

Employment During the PN Program

For both states, 271 of the 1350 enrolled students, 20.1%, were employed while attending the practical nursing program. By state, 21.9% of the Illinois students and 16.9% of the Iowa students were employed. In Illinois, each of the graduates and dropouts reported 21.9% were employed. In Iowa, 23.5% of the dropouts and 16.2% of the graduates had held gainful employment during the time they were enrolled in the PN program.

No explanation for the discrepancy in Iowa was determined from the data available.

An analysis of the employed students data and whether or not this was related to graduation or dropping out, showed no consistent pattern. There was a considerable variation among schools in the number of students employed while attending the PN program. Only 2 schools, both in Iowa, had no students employed while attending the program; 11 of the 45 schools had at least 25% of their students holding jobs, and 9 schools had less than 10% of their students holding jobs. 8 schools had approximately 30% or more of their students employed. The other 23 schools reported from 10 to 25% of their students who held jobs. Only two of the schools with the highest percentage of their students holding jobs were located in large metropolitan areas. There were no particular relationship between the percentage of the students who held jobs while attending school and the percentage of dropouts at the various schools. The lowest dropout school had the lowest percentage of students employed; however, the group of schools with the next to the highest retention rate had the highest percentage of students employed while attending the PN programs.

Acceptance of LPNs and Satisfaction of the Graduates

A form of the Hoppock Job Satisfaction Blank was included as a part of the follow-up questionnaire. This instrument is comprised of four base questions with a Likert-type scale with a descriptive statement for each point of the seven points on the scale. The four items deal with: how well the respondent likes their job; how much of the time they are satisfied with their job; a comparison of how satisfied the respondent is when compared to how they think others would respond; and, how they feel about changing from their present job. The minimum score would be 4, a one on each scale, and the maximum score would be 28. A higher score would indicate a higher level of satisfaction on each of the four scales. Follow-up responses were available from 907 of the 1056 graduates. 27.1%, 246 graduates, had a total score of from 24 to 28. 57.6%, 522 graduates, indicated a satisfaction score of 20 through 23. An additional 12.7% had a total score of 16 through 19. A reasonable interpretation of these responses would indicate that approximately 85% of all graduates who responded were "enthusiastic" or "very satisfied" with their position after graduation; they had to respond at either the 5, 6 or 7 level on each of the four scales. The wording on the response categories are sufficiently strong to make the "enthusiastic" or "very satisfied" interpretation.

During the final test session the students were asked to respond to a series of items in terms of the degree of acceptance they felt was given to Licensed Practical Nurses by various categories of personnel employed in the health care facility. These reactions were to be based upon their experiences during their clinical affiliations as a part of the PN program. Table 6.1 reports the frequencies of responses for the degree of felt acceptance by the various categories of personnel. Approximately 1026 of the 1056 graduates responded to these items.

TABLE 6.1: STUDENTS' PERCEPTION OF THE ACCEPTANCE OF LPNs BY HEALTH FACILITY PERSONNEL

	Degree of Acceptance					
Personnel	Complete Acceptance	Moderate Acceptance	Passive	Mild Disapproval	Hostile	Total
Physician	494	398	127	8	1	1028
Hosp. Admin'tor	646	284	91	4	1	1026
Supervisors (RN)	446	432	113	25	5	1021
RN - Gen. Duty	338	478	138	62	18	1034
Other LPNs	842	116	55	5	3	1021
Nurse Aides	247	214	349	141	75	1026
Skilled - Health	378	322	306	18	2	1026
Aux. Personnel	461	228	309	26	2	1026
Office and Clerical	447	249	315	16	0	1027
Total N	4299	2721	1803	305	107	9235
% of Total	46.5	29.5	19.5	3.3	1.1	

As might be expected, the highest level of "complete acceptance" was by LPNs. Across all levels of personnel, 46.5% of the responses indicated "complete acceptance" on average across all groups. 29.5% felt LPNs were given "moderate acceptance." Only 1.1% classified acceptance of LPNs as "hostile." The group giving the least acceptance, in the views of the PN students, were the nurse aides. This is not particularly surprising, since the nurse aides may have seen the LPN students and other LPNs as a threat to the aide positions. In addition, very often the LPNs

were given the closest supervisory responsibility for the nurses aides and, therefore, could have provided a point of potential conflict or disagreement. The students saw approximately 65% of the hospital administrator as giving "complete" acceptance to the LPN, while approximately 45% of the RN supervisors and 34% of the general duty RNs gave "complete" acceptance. Again, this could be a situation where duties may be interchangeable and something of a threat to the general duty RNs. In general, the students perceived a high degree of acceptance by all categories of personnel.

Additional analyses of the student's perception of acceptance were made according to the scores of the graduates on the Job Satisfaction Blank after completion and being employed. The satisfaction measure was obtained through the follow-up of graduates. Additional analyses were conducted according to type of institution and area of specialization of employment. There were no distinct differences in the perceived level of acceptance by type of health institution, by clinical specialization, nor level of satisfaction of the graduate.

During the third test session the students were asked to respond to three items to reflect: 1) their felt competence to perform; 2) their confidence in performing in the area, and 3) their satisfaction with their practical nursing preparation program. They were to respond on a five-point scale of very, somewhat, undecided, not very, and not at all. The students responded to each of the three items for each of six nursing specialty areas as to their felt competence, confidence and satisfaction. Table F.1 shows the frequency of response on the five-point scale for each of the following nursing areas: basic nursing, nursing care of adults, long-term care/geriatrics, care of children, care of mother and new-born, and care of psychiatric patients.

The students reported a very high degree of felt competence and confidence as well as satisfaction with their preparation in the basic nursing and the nursing care of adults categories. In the areas of care of children and care of mothers and new-born, they expressed somewhat less felt competence and confidence; approximately 45% in the "very competent" category, and somewhat over 50% in the "very confident" to perform category. There was a less sure feeling of both competence and confidence in the geriatric area and significantly less feeling of both competence and confidence in the psychiatric area. Approximately 15% of the graduates felt "very" satisfied with their preparation, competence or confidence in performing in the psychiatric area. There was a much higher degree of dissatisfaction with the preparation for the psychiatric area than with any other area. In general, they were somewhat more confident that they could perform at a quality level than they felt with their competence to perform. Over the various nursing areas they were a highly satisfied and a confident group that they could perform in a competent manner in all areas with the exception of the psychiatric.

Twelve schools, six in each state, offered special clinical experiences in the psychiatric nursing area. Of the 19 known graduates

who were employed at follow-up in a psychiatric setting, eight of the individuals had performed a special psychiatric clinical experience. All eight of these graduates were from Iowa with five from one school. This school accepted students on state mental health scholarships. Another school in Iowa that also accepted students on mental health scholarships, did not provide a special psychiatric affiliation, but they also had five graduates working in a psychiatric area at follow-up. Each of these schools was located near a state psychiatric facility. Only one graduate from an Illinois school was working in a psychiatric area, even though six of the Illinois schools offered special psychiatric affiliations and several were close to state psychiatric facilities. A total of 67 students listed psychiatric work as their first preference for employment during the last month of their program. Only 5.6% of those who expressed a first or second choice for the psychiatric area were actually employed in a psychiatric area at follow-up. Significantly more of the students who had participated in a psychiatric affiliation expressed a high level of preference for employment in this area than those students who had not had such an experience.

Anticipated Employment and Actual Employment Following the PN Program

Included in the instruments administered during the last month the students were in the program were items concerning employment plans. 88.2% of the 1012 students responding indicated that they intended to work full-time upon graduation. An additional 10.9% indicated that they anticipated working part-time. Less than 1% indicated that they planned to continue their education or not to enter employment. 39.1% of the respondents had already made a commitment to accept a particular job.

At this same time, 416 students, approximately 40%, indicated that they planned to obtain additional education consisting of at least six months or more, sometime in the future. Practically all of the students indicated that they did not anticipate pursuing further training of an in-service or upgrading type to improve or extend their nursing competencies within the 18 months after graduation. The most common preference for longer term, full-time education was to continue to professional nursing certification, most often in a junior college.

Three mailings were made in following up the graduates. The first mailing was conducted 5 to 9 months after graduation, the second mailing 7 to 11 months, and the third, 9 to 13 months. At the time of the follow-up, 61.5%, 568 graduates, had been on their present job from 4 to 6 months. Approximately 30% had been on their present job from 1 to 3 months, while approximately 9% had been on their present job from 7 months or more. These responses included 924 of the total of 1056 graduates. These data would tend to confirm data in earlier phases of the Study which indicated that the practical nurse tends to work full-time and on a regular basis. Also, graduates of a practical nursing program tend to seek employment almost immediately upon completion and to continue on that job on a full-time basis.

Place of Employment

During the third testing session the students were asked about the general location in which they anticipated employment following completion of the PN program. 883 of the 1035 students responding had definite ideas concerning the general location in which they were likely to be employed. A total of 54.9% indicated that they expected to be employed at one of the institutions that had provided a part of the clinical affiliation for the preparation program. An additional 9.5% indicated they would be employed in the same community in which the program was located. 35.6% of the students indicated they would most likely be employed in a community different from the one in which the PN program was located. The majority of those who anticipated becoming employed in a different community indicated it was most likely that they would be employed in a community near their place of permanent residence. Further analyses of the data showed that many students had attended a PN program in a larger community on a commuting or a temporary basis but would be returning for employment to a smaller community in the same general geographic area.

At the time of follow-up, a similar question was included concerning the relationship of their place of employment to the practical nursing program. Approximately 50% of all graduates accepted employment in an institution or facility that had a clinical affiliation with the program in which the individuals gained their preparation. An additional 5.7% were employed at a location where they had at least observational experiences as a part of their clinical relationships. 44.6% of all students gained employment at a location that was not related to their preparation program. These data are quite similar to those found in the early phases of the Study concerning all currently licensed and employed practical nurses in Illinois and Iowa. At that time, approximately 50% of all persons who had an active license were employed in an institution where they had some clinical contact during their preparation program. It would appear that the students, during the latter part of the preparation program, have relatively firm plans and, in many cases, a commitment for employment. Many of these commitments and relationships were established either prior to entering the preparation program or during the clinical experiences that are a part of that program.

These data would indicate some of the significant benefits accruing to health institutions that provide clinical affiliation for preparatory programs. Not only do they gain a source of prepared persons, but those persons are familiar with the routines and procedures of the institution and therefore may significantly reduce the investment in initial training on the job.

930 of the 1056 graduates reported the distance from their place of preparation to their place of employment on the follow-up. 54.3% of all those responding indicated employment in the same city where the preparation program was located. In addition, 18.5% were employed within 25 miles and 10.2% were employed at a distance 25 to 50 miles from the point of preparation.

In total, almost 75% of all graduates became employed within 50 miles of the preparation program. The data would indicate that the new graduates during 1968 formed patterns very similar to those found when all licensed PNs were studied in the earlier phases of the study. That is, the LPNs tended to become employed and continue in the same general area where they received their preparation. This characteristic is particularly important to more rural areas where shortages of practical nurses have been reported. It would seem that it is most important that some arrangement for preparation be made in such rural areas. Most of the moves involving greater distances from the preparation program occurred with the young, single group who married during or shortly after completion of the PN program.

Preference for and Employment by Type of Institution and Nursing Service

During the third visit to the schools, the students were asked to state their preference for future employment by type of institution and nursing service. The follow-up questionnaire to graduates included a similar request. Table F.1 reports the preferences and actual employment by state and type of health institution. Prior to completion of the program, approximately 50% of all students indicated a preference for working in a general hospital. The Illinois students stated a somewhat higher preference, 56.6% than the Iowa students, 49.5%. The next largest category of preference was for work in a physician's office. 24.9% of the Iowa students and 16.9% of the Illinois students stated this preference. Apparently, working in a physician's office has a higher attraction for both the students as they complete their PN programs and for the older, employed LPN in the field. A similar high percentage of preference was found through interviewing of all licensed practical nurses in an earlier phase of the study. The working hours, status associated with the position, and other factors apparently make this one of the most desirable assignments for a LPN. The third highest preference was for work in a psychiatric institution. Across each state the preferences were approximately 6.6%. Specialized hospitals and nursing homes or geriatric facilities were the fourth and fifth most preferred with approximately 5.5% each.

The employment situation for 917 of the 1056 graduates were reported on the follow-up questionnaire. In actual employment, 78.2% of all graduates were employed in general hospitals. The next highest category of employment was in nursing homes or geriatric facilities at 10.7%. 4.7% were employed in specialized hospitals while 2.5% were employed in a physician's office and 2.2% were employed in psychiatric facilities. A higher percentage of the Illinois graduates than of the Iowa graduates were employed in general hospitals, while almost twice as high a percentage of the Iowa students were employed in geriatric facilities or nursing homes. Iowa students were proportionately more likely to be employed in a psychiatric facility. Less than 1% of all graduates were employed in each of: institutions for the mentally retarded, TB or communicable disease facilities, private duty or public health.

Both the stated preferences and the actual employment reflect a wide range of interest and opportunity for the new practical nursing graduate. The specific opportunities existing near the residence of the practical nurse limited somewhat the actual choices of the graduate. However, practically all persons reported that they were able to obtain employment in an institution and specialty satisfactory to them.

A more detailed analysis of the level of satisfaction reported by the graduates on their job and whether or not they obtained their first or second preferences for both type of institution and type of assignment was conducted. On the follow-up, a total of 2.6% of the graduates scored low enough on the total Hoppock Job Satisfaction Blank to indicate they were "somewhat dissatisfied" with their present position or duties. An additional 12.7% were only "moderately satisfied." The overwhelming majority of all graduates expressed a very high degree of satisfaction. The section by Martin in Chapter VII deals more in detail with the satisfaction of the graduates on their employment following practical nurse preparation.

Preparation and Employment in the Specialty Areas

The basic curriculum requirements of the licensure agencies in each state specify preparation must be given in basic nursing, pediatrics, obstetrics, and the medical-surgical area. In addition, a number of programs offered organized clinical experiences in a number of additional areas. Some schools provided observational experiences only in other specialty areas. A number of schools provided time near the end of the program where the individual student could make elective choices to gain additional or new experiences. Part II of this Final Report, An Analysis of Selected Educational Programs in Practical Nursing, reports in more detail the actual curricula provided by the schools in this Study. Six of the 45 schools offered additional clinical experiences in the operating room; 16 offered experiences in the recovery room; 8 offered experiences in the intensive care unit; 12 offered special psychiatric experiences; 8 offered experiences in the emergency room; and 2 offered special experiences in public health agencies.

Included in the 897 cases where the specialty assignments within a general hospital were known, the following was found: 5 were in the operating room, 41 were in intensive care units, 7 were working in the X-ray area, 14 were working in the emergency room, 34 were working as medication nurses, 27 were in administrative or supervisory positions, 1 was working as an inhalation therapist, and 5 were working in rehabilitation units. In total, somewhat over 15% were working in specialized areas within general hospitals. Other types of assignments included: 99 in the medical area, 166 in the medical-surgical area, 75 in obstetrics, 55 in pediatrics, 141 in surgical units, and 20 in orthopedics.

When the students stated their preferred areas of employment at the last school testing session, they were asked to rank up to six areas. A total of 133 students had stated a first or second preference for the

public health area. No graduate was employed in a public health agency or setting. A total of 162 persons had stated a first or second choice for the psychiatric area, while a total of 19 graduates were employed in the area. In total, 166 students had stated a first or second preference for the geriatrics area, while 98 persons were employed in nursing homes or geriatric units. A total of 404 persons had expressed first or second interest in pediatrics and 491 had expressed similar interests in the obstetrics area, while 55 and 75 graduates respectively were employed in these areas.

At the third testing session the students were also asked to indicate their preferences for six basic clinical areas for employment. They were to give a rank order to each of the six areas of: nursing care for adults, long-term/geriatrics, care of children, care of mothers and new-born, care of psychiatric patients, and public health nursing. The final grades given by the PN school in each of the first five areas were then compared with the preferences as expressed by the students. A total of 82 students expressed a first preference and 63 students expressed a second preference for public health nursing. However, separate grades in public health were not given by the schools and, therefore, are not included in Table F.4, which reports these data.

Percentages and comparisons in this section and in Table F.4 are based on the number of grades given and the number of persons receiving each of the different grades. Across all areas in the practical nursing program, the faculty tended to give the lowest percentage of A's in the basic nursing and medical-surgical nursing areas. Approximately 15% of the students were given A's in medical-surgical nursing. In total, approximately 20% of the students were given A's, approximately 50% were given B's, approximately 27% were given C's, and slightly over 2.0% were given D's and F's across all grading areas. The highest percentage of A's were given in the specialty areas of psychiatrics and geriatrics.

A comparison of the student's preference for clinical area and school grades received in that area show small relationships. In the medical-surgical area a total of 14.9% of the students received A grades. Almost an equal percentage of the students ranked medical-surgical nursing in each of the three preference levels of first and second preference (high), third and fourth preference (middle), and fifth and sixth (low) preference. While 23.4% of all grades in geriatrics were A's, only 11% of the students who received A's in this area specified geriatrics as a first or second preference. Approximately the same percentage of students expressed third and fourth, and fifth and sixth preference for geriatrics as received A's in that area. There is somewhat of an inverse relationship between grades given in geriatrics and the preference for employment in that field. More often than in the other clinical areas, geriatrics was more accepted in employment while being listed low in preference.

Activities of the Graduates Prior to and Following Completion of the PN Program

Table F.5 presents the data relative to the labor force and non-labor force activities at the time of application, generally just prior to entering the PN program, and the same type of data reported by these graduates at follow-up. 892, or 84.5%, of the 1056 graduates were active in the labor force preceding their entry into the practical nursing school. 8.2% reported that they were unemployed and an additional 2.2% reported that they were housewives. Of those who were active in the labor force, 63% were employed on a full-time basis, 19.6% were employed part-time and 17.4% were employed but did not specify the degree of involvement.

Of the total graduates, 464, 44.2% had been employed as nurse aides prior to entering the practical nursing program. Of these, 68.3% were employed full-time, 13.9% were employed part-time, and approximately 18% did not specify whether their employment was full-time or part-time. All those persons who were employed in the skilled non-health category and the semi-skilled non-health category (nurse aides) had a higher percentage of persons working full-time. Of those cases where the information was known, the skilled non-health group had 72.7% employed full-time, whereas 30.9% were employed on a part-time basis.

37.3% of the graduates had been employed in non-health type of occupations prior to enrollment in the practical nursing program. Of the total graduates, 5.2% had been employed at the skilled level, 12.6% employed at the semi-skilled level, 11.6% at the unskilled level, 4.1% in sales work and 3.9% were working as waitresses or other general jobs. Approximately 50% of those who had been working as waitresses and other general jobs had been employed on a part-time basis. Approximately 20% of all the graduates had been employed prior to entering the PN program at positions requiring very little, if any, training for the job they held.

On the basis of the above data, the practical nursing programs enrolled students in only 10% of the cases who were not at least somewhat active in the labor force. On the other hand, preparation in practical nursing provided an upward mobility step for a great majority of all persons. It also provided a transition step for the 37.3% who were working in non-health areas, plus an additional 15.5% who classified themselves as unemployed or housewives. In total, approximately 50% of the total graduates had not been employed in the health field prior to preparation as a practical nurse. The largest single group entering the practical nursing program were those persons who had been working as nurse aides prior to entry. At the time preceding entry to the PN program, a total of 44.2% of all graduates had been employed as nurse aides. 319 or 30% of the total graduates had been employed full-time as aides.

After completion of PN training at the time of follow-up, 85.8% of all graduates were employed as LPNs, 93% of them full-time. An additional 2% were employed at other types of positions within the health area; some of this 2% reflects students who were awaiting final results of their licensure exam.

A total of 29 graduates had continued on to other types of educational activities. 15 students had entered programs for registered nursing or other technical level health specialties. Six of those who reported additional education had entered short-term or on-the-job-training in a health facility.

Of the graduates, 4.4%, 346 persons, reported themselves to be housewives. This is a relatively small number considering the fact that 204 persons had changed from single to married since they entered as students. A total of 1.9% reported themselves as being unemployed, by their own choice and on a temporary basis. The unemployment category decreased from 8.2% prior to training to 1.9% following training. Twice as many, 46 as compared to 23, reported themselves as being housewives after training.

Although the data are not entirely clear concerning the total changes in full-time and part-time employment, due to the number of cases where the respondent did not specify this condition, it seems warranted to say that there was a significant change from part-time employment to full-time employment from the time preceding entry into the PN program until the time of follow-up. Prior to entering the PN program a total of 19.6% of those where employment information was known reported that they were employed on a part-time basis, and an additional 17.4% did not specify the amount of time they were employed. Following preparation, only 7.4% of the 918 persons who were in the labor force reported that they were working only part-time.

The data from the new graduates at follow-up was very similar to that found when the study was made of all persons who had a current license, regardless of age or length of time they had a license. In the study of all LPNs, approximately 75% of all who had an active license were employed full-time. An additional approximately 9% were employed on a part-time basis. These percentages were similar across all age groups up to and including 60 years of age. There was a slight decrease in the percentages of LPNs who were employed full-time during the ages of 25 to 35, the child-bearing and rearing ages; a somewhat larger percentage of this age group were working part-time and fewer were working full-time. Again, the conclusion seems warranted that the investment in preparation of practical nurses yields a very high return on investment in terms of full-time continuously employed graduates providing nursing services.

Labor Force Activities at the Time of Application and at Follow-up for the Dropouts

A total of 294 of the students who enrolled in the criterion classes across the 45 programs did not successfully complete all the requirements of their PN program with their class and gain a recommendation for the licensure exam. Approximately 18 of the 294 students were "dropped back" into a succeeding section of a next class and remained in essentially continuous enrollment. Also, some were granted permission to re-enter at a later date when they had discontinued due to illness

or other reason; a total of 14 had re-entered a PN program by the time of follow-up.

Since the majority of those who dropped out did so early in the program, the information concerning dropouts is not as adequate as for the graduates. In 111 of the 294 cases, their employment status was unknown for the time preceding entry into the PN program. At the time of follow-up, the labor force activities of 94 persons were unknown. 12 persons reported themselves as unemployed and an additional 8 reported themselves as housewives during the time immediately preceding entry into the PN program. On follow-up a total of 65 persons reported themselves as housewives. This group included several who had dropped out for pregnancy.

Similar to the graduates, the largest single group of dropouts were employed as nurse aides prior to their entry into the practical nursing program. 20.7% were employed in this category. Of the cases where the information was known, a total of 183 persons were employed in non-health areas, while 62 persons were employed in a health area prior to entering the practical nursing program. A total of 52 persons became employed or re-employed in the health field after they dropped out. A total of 31 persons reported that they were employed as nurse aides prior to entry and were again employed as nurse aides following their discontinuing the PN program. A total of 98 of the 183 cases where the information was known were participating in the labor force following the discontinuance of the PN program. The data suggest only a minor net shift of employment from non-health to the health field for the dropouts.

Three students had entered a general college curriculum, 3 had entered an RN program, 14 had re-entered a practical nursing program and 6 others had entered other preparation programs in the health field and 5 entered non-health training programs after discontinuing the practical nursing program. A total of 31 students had continued their education in some program after discontinuing the PN program. Several of those persons who had continued their education in another area were students who had higher abilities as shown by the early selection instruments for the practical nursing program.

One-half of the group who reported themselves as housewives after leaving the PN program had been employed in a semi-skilled health, semi-skilled non-health or the unskilled non-health categories. Only six persons who reported themselves as housewives prior to entry also reported themselves as housewives on follow-up. 4.8% had been waitresses or in general employment.

44.1% of the graduates and 20.7% of the dropouts had been employed as nurse aides prior to the time they entered the practical nursing program. No dropout had been employed in sales work, whereas 4.1% of the graduates had been employed in this area prior to entering PN program. Of those persons who reported themselves unemployed prior to entering the PN program, proportionately a higher percentage, 8.2% compared to 4.1%, graduated

than dropped out. A total of 10.5% of the dropouts in contrast to 3.2% of the graduates, had entered other educational programs after leaving the practical nursing program. Similar percentages of both the graduates and dropouts had been employed in the non-health area prior to entering the practical nursing program; 32.7% of the dropouts and 37.3% of the graduates had been so employed.

Further analyses of the dropout group revealed that several groups could be identified. A number of students married or became pregnant during the program and therefore dropped out due to family-related activities. Another group, comprising approximately 10% of the total dropout group, continued to other types of educational program. These were most likely to be the younger, single students with better ability. The group of married women with families, particularly among the non-white group most often enrolled in MDTA programs, dropped out and found employment at the unskilled or semi-skilled level, either in the health field or another area, many for financial reasons. Interpretations of the labor force activities following dropout must be limited, due to the fact that almost one-third of the cases were unknown.

The majority of all dropouts, as reported in earlier chapters, had academic weaknesses. They were the group with the lowest percentage of responses obtained at follow-up. However, the severe definition of a dropout as used in this Study should be taken into account in the interpretation of all data. 18 students had dropped back and an additional 14 students had dropped out and re-entered a PN program at the time of follow-up. Consequently, the 294 dropout total could easily be reduced to 262 by the time of follow-up. Additionally, several others were essentially "on-leave" from their school due to illness, finances, pregnancy or other reasons. It would seem reasonable to speculate that an additional 50 students may complete a PN program at some time in the future.

CHAPTER VII

SUMMARIES OF SUPPLEMENTARY STUDIES

The majority of staff, both in numbers and total staff time, during the PNS was composed of graduate assistants. In total, over forty graduate students received support from this study for a period of time ranging from one term to five years.

Three doctoral dissertations based on data from the PNS have been completed and three others are in process. Summaries of the three that have been completed are included in this Chapter.

In each case the candidate: (1) held an appointment with the study for at least two years; (2) formulated his topic as a specific focus within the broad objectives of the total study; (3) was involved in the development of the research instruments for data collection; and, (4) gave major direction to carrying out the investigation of his topic. Consequently, these studies were independently conducted but directly supportive to the major study.

Bailey focused on the possible application of Super's vocational development theory to the behavior of young, single students in the practical nursing programs. His sample was a sub-group of those included in the total study.

Martin investigated the satisfaction graduate practical nurses receive from their work and the degree of relationship between this satisfaction and their measured and expressed interests. His sample, 456 cases, were graduates of the PN programs in Illinois who were employed full-time as practical nurses three to six months after completing their program.

Suzuki developed an instrument to assess the image of practical nurses. This instrument was then used to determine changes in the image as held by PN students during their PN program and differences in image among the PN students and the PN faculty.

The complete studies may be obtained through University Microfilms, Ann Arbor, Michigan, or through an inter-library loan from the University of Illinois, Urbana, Illinois.

An Investigation of the Vocational Behavior of Selected Women Vocational Education Students, L. J. Bailey

Summary

The recent trend toward increasing rates of female employment has dramatically changed the composition of the labor force. Presently, about forty percent of all workers are women and their relative proportion continues to increase. As a result, vocational education has been challenged with an increasing responsibility to prepare women for the world of work. Expansion of vocational education education programs for women, however, is handicapped by a lack of information relative to women's vocational behavior.

Vocational theorizing has traditionally been distinguished by the use of trait-and-factor methods. This approach was characterized by differential occupational prediction aided by aptitude test profiles. The process of choosing an occupation was considered to be a point-in-time event resulting from an individual's "true reasoning" concerning his personal attributes and the available employment opportunities.

The emergence of vocational development theories in the early 1950's considerably expanded a structure for investigating vocational behavior. Derived from developmental psychology, this approach regarded an individual's vocational development as a particular aspect of general growth and development. It was considered that the vocational development continuum was composed of vocational life stages, each one defined by its peculiar characteristics. The significance of vocational development theories was their emphasis on the continuous, orderly, and irreversible nature of vocational behavior. Occupational choice was considered to be a process rather than an event.

Despite the progress of vocational theorizing, few empirical studies to date have been limited almost entirely to men and boys. The present investigation was designed as an attempt to apply aspects of Super's vocational development theory to the study of selected women enrolled in a vocational education program.

A sample of 485 students was drawn from the population of enrolled students utilized for the Practical Nursing Study. Variables to be investigated were drawn from instruments administered to all enrolled students. Due to the tenuous nature of vocational theorizing, a descriptive design was utilized in an attempt to identify the variables relevent to women's vocational behavior during the exploration vocational life stage.

Statement of the Problem

The primary problem of the study was to determine the applicability of Super's vocational development theory for explaining the vocational behavior of young practical nursing students during the exploration vocational life stage. Specifically, the study sought to determine (1) the degree to which students educational-vocational choices were based on work interests, work values, and reality factors, (2) the extent of students

Bailey, Larry Joe. An Investigation of the Vocational Behavior of Selected Women Vocational Education Students, (Doctoral Thesis) Urbana, Ill., 1968.

tentative vocational exploration, (3) the resources utilized in making tentative educational-vocational choices, (4) the relationship of achievement in practical nurse training to ability, previous achievement, and occupational experience, (5) the relationship of trial employment to ability and performance in training, and (6) the relationship of coping with vocational developmental tasks to completion of practical nurse training.

Findings and Conclusions

The hypothesis for this study are repeated here.

Hypothesis I. Students' previous exploratory occupational experiences are significantly related to the occupational field for which they are training.

The data indicate acceptance of the research hypothesis. Over three-fourths of the students specified some prior health related experience. A statistically significant proportion of those individuals had previous experience as "nurse aides or unlicensed PNs" ($x^2 = 140.4$, ndf = 1, $P. < .001$). In addition, eighty-seven percent of the students were employed immediately prior to entering PN training. Of the students who worked, a statistically significant proportion of them were employed at the "semi-skilled health related" level ($x^2 = 54.6$, ndf = 1, $P. < .001$). The data also revealed that twenty-six of the fifty-one students, 51.0 percent, who were not employed immediately prior to entering PN training had some type of previous health related experience; and, 59.0 percent of the students who were employed at non-health jobs immediately preceding PN training had some type of previous health related experience.

Hypothesis II. Students' reasons for occupational choice are significantly related to work interests and values.

The data indicate partial acceptance of the research hypothesis. The arbitrary definition of work "interests" and "values" used here was derived from Super's general discussion of "intrinsic" and "extrinsic" work values (Super, 1957, p. 299). Students' expressed reasons for choosing practical nursing which referred to the "nature of the work activity" were deemed, by the writer, to indicate a work interest; those expressed reasons which indicated outcomes or products of the work activity were characterized as being indicative of work values.

Based upon an expected equal distribution among categories, the "personal desire to help people" was the only category containing a significantly greater proportion of responses than would be expected to occur by chance ($x^2 = 58.4$, ndf = 1, $P. < .001$). Thus the primary expressed reason for occupational choice could be said to indicate an extrinsic work value orientation. Other expressed reasons seemsed to relate more to the nature of the work activity, i.e., "personal preference for type of work-duties," "long standing personal preference for nursing". However, none of those categories were significantly different from the chance expectancy.

Hypothesis III. Students' reasons for educational choice are significantly related to reality factors.

The data indicate acceptance of the research hypothesis. Only one category of expressed reasons for educational choice was greater than the frequency expected by chance. Sixty-one percent of the students chose the practical nursing program of attendance because it was "close to home" ($x^2 = 188.2$, ndf = 1, $P. < .001$). The response reflects the

Hypothesis IV. Students' reasons for educational-vocational choices are significantly related to the time at which their choices were made.

The data indicate rejection of the research hypothesis. Although students most commonly made their decisions to enroll in practical nurse training "more than six months but less than one year" before they actually entered, no statistically significant associations were found when compared with students' reasons for occupational choice ($C = .260$, $ndf = 18$, $P. .10$) or students' reasons for educational choice ($C = .249$, $ndf = 21$, $P. .80$).

Hypothesis V. Resources and resource persons utilized by students in making their educational-vocational choices are significantly related to the occupational field for which they are training.

The data indicate partial acceptance of the hypothesis. Initially, students discussed their occupational interests with parents, only 9.8 percent of whom were employed in the health occupations. Parents were also important in influencing their daughters' final decision to attend PN training. Of those parents indicated as being "most influential", 25.9 percent of them were employed in the health occupations. However, friends were listed by the students as being the most influential in the decision to attend PN training; 71.6 percent of whom were employed in the health occupations. The increase in the proportion of parents and the large percentage of friends employed in the health occupations, who were listed as being most influential individuals, was related to students' occupational choice.

Students most often received information concerning the PN program they attended from friends. The employment level of those individuals were unknown. Therefore, no conclusions could be drawn about the association between employment level and source of educational information.

Hypothesis VI. Ability, previous achievement, and occupational experience are significantly related to achievement in occupational training.

The data indicate partial acceptance of the research hypothesis. Product-moment correlation coefficients revealed that students' high school rank was significantly related to PN classroom achievement, clinical achievement, and State Board exam scores. Students' grade point average was significantly related to PN classroom achievement and State Board scores. Both ability measures (PACE and OTIS) were significantly correlated with PN classroom achievement and State Board achievement. However, previous health related experience, most recent employment prior to entering PN training, and number of months employed were found not to be significantly related to any of the PN achievement measures. None of the ability, previous achievement, or experience variables were significantly related to PN students' patient relationship rank, and only one variable (high school rank) was significantly related to clinical achievement.

Hypothesis VII. Graduates' trail employment is significantly related to ability and prior achievement in training.

The data indicate rejection of the hypothesis. The employment follow-up questionnaire was returned by 369 graduates or 91.1 percent of the test sample. Of the 369 respondents, 345 were employed either full or part-time; two were working as unlicensed practical nurses. Therefore, 100 percent of the individuals returning the questionnaires who were employed following training were working as practical nurses. The study could not adequately test the hypothesis since all employed graduates were working as LPNs. Successful completion of PN training, regardless of relative ability, provided for initial employment success.

Hypothesis VIII. Completion students and drop-outs differ significantly in relation to the ability to cope with the demands of the vocational developmental tasks.

The data indicate partial acceptance of the hypothesis. Statistically significant t-values were obtained between student and drop-out mean scores on the Otis test of mental ability and the Pre-Admission and Classification Examination. Statistically significant x^2 values were computed between completion students and drop-outs previous exploratory occupational experiences. Students who dropped out of training were more likely to have worked at a lower health employment level and were more likely to have worked at other than health related jobs prior to entering PN training. However, a significantly greater proportion of drop-outs had had prior experience as "candy stripers" in comparison to completion students. A meaningful inference was not possible to make from this observation.

Hypothesis IX. There are identifiable, meaningful relationships among the vocational developmental task variables.

The data indicate partial acceptance of the research hypothesis. Intercorrelations among variables revealed that age was significantly related to prior health related experience, most recent employment prior to entering PN training, and number of months employed. Type of employment experience and number of months employed were also significantly related. High significant correlations were found between the Otis test of mental ability and all of the PACE subtests; and, intercorrelations among the PACE subtests were highly significant. PN classroom achievement was found to be significantly related to all previous achievement and ability variables. Finally, State Board scores were significantly correlated with all ability and achievement measures, except patient relationship rank.

In general, the data indicate positive significant relationships among all of the cognitive type of measures. However, the data suggest that variables other than those utilized in this study were associated with clinical achievement and patient relationship rank.

Limitations of the Study

1. The model for this study was derived from Super's Vocational development theory and was restricted to only one vocational life stage. It should be recognized that other life stages and other vocational theories may have equal relevance for vocational education.

2. The data indicate that practical nursing as an occupation, and individuals selecting practical nursing, has certain unique characteristics. The behavior of young women in other occupational areas cannot be inferred.

3. No attempt was made to insure the representativeness of the sample in relation to the PNS population. The sample was restricted by age, sex, marital status, and type of financial support (i.e., MDTA students were excluded). Therefore, caution should be used in generalizing to these types of population.

4. The ex post facto design of the study prohibited full control of the independent variables. The obtained relationships, therefore, cannot be asserted with the confidence of an experimental study.

5. The cooperative relationship that existed with the Practical Nursing Study afforded the writer an opportunity to profit from previous learnings and to benefit from the comprehensiveness of the research data. However, the testing of the research hypothesis was somewhat hampered by the non-specific nature of some data collection instruments.

6. The nominal scaling of the questionnaire type data prevented more powerful and sophisticated statistical methods.

7. No attempt was made to control for geographic or inter-school differences. The quality and character of individual programs may have influenced the findings.

Implications for Further Research

1. Research should be taken to determine the applicability of Super's vocational development theory for studying other occupational groups. Alternative theories should be also tested.

2. More efforts are needed to explicitly define the vocational developmental task variables which are characteristic of each vocational life stage. An experimental study should be designed to investigate the relationships among the vocational developmental task variables.

3. Efforts should be directed toward quantifying categorical data to permit the use of more powerful parametric statistical methods. In addition, the applicability of "newer" methods of statistical analysis should be investigated. The stochastic model utilized by Gribbons and Lohnes (1966) would seem to offer promise for future career development studies.

4. Research is needed to identify those variables that are related to the non-cognitive aspects of occupational achievement. The affective domain is a possible determiner. Measurement instruments are also needed to evaluate non-cognitive achievement.

5. A broader population of groups should be studied. This investigation was concerned only with those individuals who entered training, which is already a highly select group.

Job Satisfaction in Practical Nursing As a Function of Measured and Expressed Interests, G. R. Martin

Summary

Statement of the Problem

The primary purpose of this study was to investigate the extent of satisfaction which practical nurses receive from their work and the degree of relationship between this satisfaction and their measured interests on the Minnesota Vocational Interest Inventory and their expressed interests on a one-question Likert-type scale.

A secondary purpose of the study was to provide further validation of the Hospital Attendant and Health Service scales on the MVII.

Research literature indicated dozens of variables related to job satisfaction that have been investigated. Four of these were selected as most likely to be related to the nature of the study sample: age at entry into employment, length of employment, salary, and marital status. It was hypothesized that a significant correlation between job satisfaction and measured interests and between job satisfaction scores and expressed interests would be consistent across these four variables.

Based on previous limited research in a predominantly female occupation, this study attempted to find reasons for the high degree of job satisfaction commonly reported for those in health occupations. Predictions of the level of overall job satisfaction were made and tested for each of the selected variables.

Implications of the study for recruitment and selection procedures in Practical Nursing Schools and for high school employment counselors were projected.

Methodology

The present study was an independently conceived extension of a major research project at the University of Illinois entitled An Integrated, Longitudinal Study of Practical Nursing. Data were drawn from instruments administered to practical nursing students at 29 Illinois Schools of Practical Nursing and from a follow-up employment questionnaire mailed to all criterion class graduates of these schools three to six months after completion of their training.

The graduate sample was selected from the 548 of the 618 graduates who responded to a questionnaire. Of these, 456 met the criterion of full-time employed female practical nurses (LPN's), and therefore constituted the graduate sample.

Martin, Glen Ray. Job Satisfaction in Practical Nursing As a Function of Measured and Expressed Interests, (Doctoral Thesis), Urbana, Ill., 1968.

A second sample of 110 was randomly selected from 1,160 LPN's contacted by mail or interview in 1965 by the parent PNS. Of these, 87 returned the questionnaire, 78 of whom met the criterion of full-time employed female LPN's and therefore constituted the employment sample. This sample was necessary to obtain a comparative measure of job satisfaction from those employed over a longer period of time.

Major instruments used in addition to those of the PNS were the Minnesota Vocational Interest Inventory administered to all subjects during the fourth month of their training and the Follow-up Employment Questionnaire (FUEQ) mailed three to six months after graduation of the subjects.

The MVII (civilian version) is a relatively new inventory developed by Kenneth Clark, and published in 1965. It was prepared to provide systematic information on the interest patterns of men in non-professional occupations. The 474 items of the MVII are grouped in threes, making a total of 158 triads, which are scored on two series of scales. Of the 21 Occupational scales, the Hospital Attendant Scale was selected, and of the 9 Area scales, the Health Service Scale was selected for comparison with Hoppock Job Satisfaction Blank scores.

The FUEQ was designed by the investigator and consisted of three sections: (1) Present Position, (2) Personal Views on the Practical Nursing Program, and (3) Biographical Information. Section 1 included items on the nature, type, place and length of present employment. Included in Section 2 were five items for appraising the Practical Nursing training program, thirteen job importance factors for ranking, and the Hoppock Job Satisfaction Blank. Section 3 asked for date of birth, marital status, number of children, present salary, and intention of future work plans. The return for the graduate sample was 88.7% and for the employment sample was 79.1%.

Expressed interests were measured by a one-question Likert-type scale on the FUEQ validated by comparison with the same question on the Resident Student Blank which had been administered to all subjects during their fourth month of PN training by the parent PNS. Data utilized from the PNS were from standardized tests and from staff-designed instruments and information forms validated in pilot studies.

Results

Employment Characteristics of Practical Nurses. Mean age of the graduate sample was 26.3 years and of the employment sample, 42.6 years. Age was significantly related to plans to continue in employment, and to the rank order of importance of three extrinsic job factors: family responsibilities, extra benefits, and employer-employee relationships for the graduate sample. For the employment sample, age was significantly related to the rank order of two extrinsic job factors: financial and extra benefits, and to three intrinsic job factors: prestige, independence, and chance for advancement.

Mean length of time on the job was 3.5 months for the graduate sample and 4.8 years for the employment sample. Length of employment was significantly, but negatively, related to plans to continue on the job and to the rank order of the family responsibilities job factor for the graduate sample. No significant relationships between this variable and other job factors were found for the employment sample.

Sixty percent of the graduate sample reported their salary in the range of $75 to $100 and 37% of the employment sample reported a salary within the $75 to $100 range. Salary was significantly related to plans to continue on the job and to the rank order of three intrinsic job factors: prestige, independence, and chance for advancement for the graduate sample. No significant relationships between this variable and other job factors were found for the employment sample.

Approximately fifty percent of the graduate sample were single. Marital status was significantly related to plans to continue on the job (single LPN's less likely to continue indefinitely) and to the rank order of three job factors: family responsibilities, working hours, and extra benefits. Marital status was significantly related to family responsibilities and extra benefits ranked items for the employment sample.

When age, length of employment, salary, and marital status were compared, significant positive correlations were found between age and salary and between age and marital status and significant negative correlations were found between length of employment and salary and length of employment and age and marital status were positively and significantly related for the employment sample.

For the two samples combined, 71.9% began employment before obtaining licensure and 86.2% were still on their first job. Of the two samples 54% went to work in the same city where they received part or all of their clinical training. The LPN's were almost equally distributed in employment communities of 4 in size ranges. Less than 10% were employed in towns of less than 5,000 population.

By far the largest percentage (80.7%) of the two samples were employed in general hospitals, 44% of which were over 311 bed size/capacity. LPN duties were distributed over sixteen categories with the largest percentage performing medical/surgical (19,7%) and surgical (18.9%) duties.

Test of Hypothesis. Mean satisfaction score (JSB) was 21.94 for the graduate sample and 22.49 for the employment sample, the difference being non-significant at the .05 level. All measured interest scores on the MVII for the graduate sample were above the cut-off points established by the Manual to indicate definite interests common to those in health services. Failure to find a significant correlation between the two measures (.08 and .06 on the Hospital Attendant and Health Service scales, respectively) resulted in the rejection of the first research hypothesis and it was concluded that satisfaction scores of LPN's as measured by the Hoppock JSB are not significantly correlated with measured interest scores on the Hospital Attendant and Health Service scales of the MVII.

The test-retest reliability coefficient for the Likert-type scale of expressed interest was .27 with a lapse of 9 to 12 months between responses. On the first response (RSB), 59.1% indicated they were "very interested; it's exactly what I want to do for a living;" and 36.4% indicated they were "interested; I think I will like it more than most things I do." On the second response (FUEQ), 58.6% and 36.9% respectively responded in the same way. Significant correlations of .16 and .14 between these two measures of previous interest and JSB scores and a correlation of .44 between present expressed interest and JSB scores resulted in holding tenable the second research hypothesis.

It was concluded that satisfaction scores of LPN's as measured on the Hoppock JSB are positively and significantly correlated with expressed interest scores as measured by a Likert-type five-point scale.

Failure to find significant correlations between JSB scores and MVII scores across age, length of employment, and salary led to partial rejection of Hypothesis 3. Only on marital status were significant correlations found. Significant correlations between JSB scores and expressed interest scores (RSB and FUEQ) across the four process variables resulted in holding tenable the second part of Hypothesis 3. Therefore, it was concluded that correlations between JSB scores and MVII scores are not positively and significantly related across age at entry, length of employment, and salary but are so related for marital status; and that JSB scores and expressed interest scores (RSB and FUEQ) are positively and significantly related across all four process variables.

Hypothesis 4 was rejected when an analysis of variance for the groups stratified on age was applied, and it was concluded that level of job satisfaction of LPN's does not vary significantly with age at entry.

The employment sample was stratified and compared for the effects of length of employment on level of job satisfaction (Hypothesis 5). Significant differences were found among the three groups as follows: those with 11 to 20 years on their present job scored significantly higher on the JSB than any other length of employment group, and those on their present job from 1 to 3 years scored significantly lower than the 4 to 10 year group or the 11 to 20 year group. It was concluded, therefore, that level of satisfaction of LPN's is not consistently high regardless of length of employment.

The t-tests applied for the three groups stratified on actual salary yielded no significant differences among the groups. When subjects were classified into 3 groups on salary discrepency (expected-minus-actual salary) none of the values of t was significant. Therefore, Hypothesis 6 was rejected and it was concluded that level of job satisfaction of LPN's is not significantly higher where a deliberate choice of place/type of employment based on expressed preference is present.

Results for the graduate sample of mean rank order of importance for thirteen intrinsic/extrinsic job factors were: (1) Financial - E, (2) Working - E, (3) Co-worker relationships -E, (4) Job responsibility, -I, (5) Chance for Advancement -I, (6) Employer-Employee relationships- E, (7) Job Security -I, (8) Family responsibilities - E, (9) Geographical Location -E, (10) Extra Benefits - E, (11) Independence - I, (12) Travel - E, and (13) Prestige - I. Seven of the items received identical rank for the employment sample, including the first two and the last three.

Correlations among the 13 factors revealed a definite pattern of significant intrinsic-intrinsic and extrinsic-extrinsic relationships.

CONCLUSIONS

Discussion

Practical nursing students appear to be an unique population of potential women workers. Whereas most females receive occupational training while in or soon after leaving secondary school, the practical nurse has tended to postpone her entry into training. As noted in the Tomlinson, et al (1967) study, the median age of practical nurses graduating from Illinois approved programs during 1965 was 30.5 years. As more and expanded programs have developed, and with the tendency for the program to become associated with junior colleges or area vocational centers, a younger student population can be observed. The median age of all graduates in the 1967 criterion classes of the 29 schools participating in this study was 22.6 years, though the mean age was 27.5 years.

This trend brings added responsibility for high school counselors to acquaint themselves with the opportunities of this type of vocational training for non-college bound girls.

In many cases, practical nursing may afford opportunity to those who have wanted to be nurses, but who never had the chance to do so. In fact,this study found that 12.7% of the graduate sample expressed a long-standing personal preference for nursing as their main reason for entering PN training. Tomlinson, et al (1967) noted that practical nursing opens vistas of economic and social opportunity above that otherwise realistically available to many individuals of similar characteristics.

In an effort to account for the high level of job satisfaction among LPN's in this study, several observations were made:

1. The high level of job satisfaction for this group could not be attributed to their maturity at point of entry into the occupation. No significant difference was found in job satisfaction among age groups.

2. The high level of satisfaction was more observable for the employees who had been on their present job for more than 10 years. Critical years of least satisfaction were from 1 to 3 years. However, members even of this group "liked" their jobs, though they were not enthuasiastic about them.

3. Salary or salary discrepancy was not a determining factor since even those who were receiving less pay than they had expected to receive were, none the less, quite satisfied with their jobs.

4. Regardless of marital status, LPN's liked their jobs; however, the most satisfied nurses were the widowed, separated, or divorced. This suggested the unusual opportunity practical nursing offers these heads of households to make a better living than they could in many of the other limited opportunities open to them.

5. Satisfaction was high even for those who did not find employment in the place/type of their preference. Previous experience in a health-related occupation did not discriminate the more from the less satisfied.

What, the, did contribute to the high level of job satisfaction? Three possible explanations are offered, based on the extent of the author's experience and knowledge of practical nursing through in-depth involvement with the Practical Nursing Study over the past two years.

1. The fact that 37% of the study sample entered training because of a personal desire to help people and another 13% because of a long-standing personal desire to be a nurse indicates that at least half of this "vocational" group are characterized by "professional" motivation. It is suggested that this personality variable is an important element contributing to the high degree of job satisfaction, even though extrinsic items were ranked highest in importance among the 13 job factors. Most important was the fact that prestige and independence were ranked lowest--probably indicating a "service to others" type of person is not primarily concerned about, and has not come to expect these dividends from her chosen vocation. The ranking may be as good an indicator of what is lacking on the job as it is of what is important about the job.

2. Based on the high level of measured and expressed interests which persisted through training and onto the job for this group, and on the fact that failure to realize expected earnings or preferred place/type of employment did not decrease the level of satisfaction, it is suggested that LPN's are a realistic group of people. They have learned to accept the traditional image of the LPN probably because their training has given them a realistic picture of their vocation and because of their "service to others" motivation. Not expecting prestige nor considering it important, they are satisfied without it. Having decided to work under relatively close supervision, they are willing to accept the condition as they are.

3. A third factor that may have contributed to the high level of satisfaction is that practical nursing is one among only a few limited number of possible vocations for non-college bound and unskilled women. The training period is relatively short and stipends through the Manpower Development Training Act are available, especially for those who have never been employed and are just entering the labor force at age 35 or older. The nature of the opportunity available through PN training would tend to produce a high percentage of employees who like their job.

A second question arising from this study needs comment. Why was there a non-significant correlation between inventoried interests and job satisfaction? Other than the fact that both measures registered high scores with no extreme scores in the distribution, it would seem that other factors were operating to cause this lack of relationship. It is suggested that the MVII may indeed discriminate those with interests in health services, but that its usefulness as a predictor of satisfaction is limited for this select group. The specificity of the choices available in the triads of the MVII related to health services would almost guarantee high scores for those who have already made their vocational choice. A more advantageous use for the instrument would be as a complement to other measures used by high school and employment counselors.

Although no claim is made that results from this study are generalizable to other occupations, it is believed that the descriptive analysis and the empirical evidence presented will add to the existing knowledge about the employment characteristics of LPN's in this country, especially in view of the standardized licensure procedures across the nation.

Limitations of the Study

The more obvious limitations of the study were as follows:

1. The MVII was administered after a vocational choice had already been made and after four months of indoctrination in basic nursing. This, no doubt, biased the distribution of scores.

2. No comparison was possible on the two measures between those who dropped out of the training program (27%) and those who graduated.

3. The short length of time the graduates had been on the job made it difficult to know how much of the satisfaction expressed with the job was attributable to the novelty of it.

4. Even though the correlations between the Likert-type scale scores and the JSB scores were low, it is possible that the two instruments were measuring a similar kind of attitude toward the job. Though designed as an interest measure, the question, "How interested are you in Practical Nursing as an occupation?" is not much different from asking, "How satisfied are you with your occupation?" when asked of individuals who are already employed or are in PN training. If this similarity between the two measures did exist, it would partially account for the high levels of measurement on both instruments. The low correlation between scores on the Likert-type scale and on the two scales of the MVII (.04; .06) would indicate that the two were measuring different types of interest. The MVII, for example, asks for a preference of activities, whereas the RSB question asks about an activity already chosen.

5. More refined statistical analysis of extrinsic/intrinsic job importance factors would be needed to adequately interpret the significance of these data and to relate the data to other aspects of job satisfaction.

Implications for Further Research

1. Follow-up research on the PN school drop-outs is needed to ascertain the effects of failing to complete a training program on job satisfaction in an alternative occupation.

2. A study similar to the present one utilizing interest inventory scores available from high school records should be designed for the same vocational group.

3. A study of job satisfaction utilizing personality measures should be designed to test the claim made in this study that LPN's constitute an unique personality type which contributes basically to their high level of job satisfaction.

4. Research designed toward development of better selection and prediction techniques is needed to decrease the high drop-out rate in Illinois PN schools.

5. Further research using the MVII with this and other civilian occupational groups is required before its usefulness in counseling can be assured.

6. The technique of using an expression of interest on a Likert-type scale as a measure of occupational interest needs further refinement.

A Study of the Images of Nursing Occupations: A View by Practical Nursing Students, W. N. Suzuki

Statement of the Problem

The first if not primary problem was the development of an instrument to determine the practical nursing students' images of the nursing occupations. Assuming the successful accomplishment of this task, the second problem studied was concerned with (1) changes in practical nursing students' images of nursing occupations during training, (2) comparisons between perceptions of the images by practical nursing students who did and did not have previous nursing aide experience, (3) comparison between the drop-outs and continuing practical nursing students' perceptions of the nursing occupations, and (4) whether practical nursing instructors' image of the practical nurses were consonant with their students' image.

Summary

The increasing demands for goods and services and rapid technological growth have not only given rise to changes in existing occupations, but have also engendered a proliferation of new groups and families of positions. These modifications in the world of work have, in turn, resulted in confusion and tensions within and between occupational groups and the lay public. Successful social interaction is predicated on the communicants' recognition and cognizance of the role specifications of the other. This view of the other, which includes occupational images, is also fundamental to the recruitment, training, and successful employment in an occupational position.

The health occupations area of the world of work is currently experiencing rapid change and growth. One segment of this area is the nursing occupations. The indeterminate nature of both functional and social role specifications within the hierarchy of nursing occupations has resulted in confused imagery. The educated and trained practical nurses as an occupational group is emerging to fill a need created by the relatively static nature of the rudimentarily trained nursing aides and the migration of professional nurses from patient care to administrative and supervisory duties.

Previous research on practical nursing has focused primarily on the knowledges and skills necessary for entry and maintenance of employment. Relatively little is known about the social aspects of the practical nurse and student. One facet of the affective elements of practical nursing is the practical nursing students' perceptions of the images of the nursing occupations. Researchers have concentrated on the use of check lists to acquire descriptions of images of nursing occupations. Although verbal symbols are utilized in descriptions, the absoluteness of only single or dichotomous choice may inhibit a respondent's

Suzuki, Warren Noboru. A Study of the Images of Nursing Occupations: A View by Practical Nursing Students, (Doctoral Thesis) Urbana, Ill., 1968.

selection of an item. More likely, the descriptions lie on continua between extremes defined by descriptive bipolar words and phrases. In other words, practical nurses are not absolutely "cold" or "warm" but are best described by a point somewhere along the cold-warm continuum. Therefore, this study attempted to explore practical nursing students' images of the nursing occupations by using items in which direction and intensity of descriptions could be ascertained.

A sample of 134 students was drawn from a population of practical nursing students in Illinois. These subjects were initially enrolled in seven of the 31 practical nursing programs in Illinois during the 1966-67 academic year. The Health Occupation Image Inventory was administered to subjects during their first and fourth months of training. During this period, the students were formally introduced to, among other things, the history and ethics of practical nursing.

The Health Occupation Image Inventory consisted of two parts, the basic instrument and the cover sheet. The cover sheet was designed to ascertain subjects' identification and previous health area experience--specifically defined as prior nursing aide experience for this study. The basic instrument consisted of 19 scales defined by descriptive bipolar words and phrases bounding seven interval continua. The subjects judged the occupational groups "Practical Nurses", "Nurses Aides", and "Professional Nurses" against these scales and marked the points along the continua that most appropriately described the occupational group. Therefore, not only direction but intensity of description was obtainable.

The subjects' responses on the occupational group "Practical Nurses" at the second administration of the basic instrument were factor analyzed. Four meaningful dimensions of nursing images were extracted in this manner. The first dimension was defined by scales (king-indifferent, warm-hostile, pleasant-unpleasant, and friendly-unfriendly) that seemed to indicate an emotional or approachibility for social intercourse factor. The second major factor (defined by the efficient-inefficient, thorough-not thorough, detailed-blundering, well paid-poorly paid, and high esteem-low esteem scales) seemed to be descriptive of on-the-job performance. Scales (high and low emotional control, high and low technical skill, and high and low intellectual content) loading on the third dimension appeared to describe a competence factor. The final factor (defined by the authoriatative-indecisive, forceful-passive, dominant-submissive, and give and receive supervision and direction scales) seemed to indicate that the subjects also utilized an administrative-supervision in distinguishing nursing personnel.

The subjects differentiated between the images of the three nursing occupations. In general, the practical nurses' image was positioned between the images of nursing aides and the professional nurses. The one exception was observed for the first factor on which the subjects located the practical nurses in a superior position to nursing aides and professional nurses. Distances between the occupational groups were also examined for each factor. The subjects genrally positioned the practical nurses significantly closer to professional nurses than to the nursing aides. Only on Factor IV was the practical nurse perceived to be closer to the nursing aide raher than the professional nurse.

The images of the nursing occupations changed differentially. The subjects tended to change their image of practical nurses less than the images of nursing aides and professional nurses. Another aspect of change, interpersonal agreement on images, was also tested. The subjects' images did not, in general, converge during the first four months of training.

The images of the nursing occupations for subjects who were employed as nursing aides prior to entering practical nursing training did not significantly differ from the images of the subjects who had not had similar experiences. The images held by the drop-outs and continuing students also did not differ significantly from each other.

Finally, means for 11 of the 16 scales statistically differed between practical nursing instructors and their students. Further examination of the responses by instructors selected by their students as being most influential to them and by the instructors not so selected by students differed from each other on only five of the 16 scales.

Conclusions

Considering the previous findings and subsequent discussion, it is concluded that the first research hypothesis--subjects will differentiate quantitatively among nursing occupations--is tenable. It is further concluded that the first problem, concerned with the development of an instrument to ascertain the subjects' images of the nursing occupations, was accomplished. It is also concluded that the first question of the second problem--a description of the images of the nursing occupations--has been satisfied by the identification of the four factors.

Subjective methods for determining the dimensions of nursing occupations have been the primary technique employed in previous studies on images if the nursing occupations, such as those reported by Meyer (1959) and Davis and Oleson (1964). An analytic method for determining the images was employed for this study. Four factors were extracted from the data and described. It is proposed that although scales clustering to define the factors may change for different nursing populations, the dimensions on which students evaluate the images of the nursing occupations. If these proposals are tenable, then the technique utilized for this study could be used for further research on occupational images.

Since a quantitative change in any element of an occupational image would result in a change of that image, it is concluded that the students' images of the three nursing occupations changed during the first four months of their training. It is, therefore, proposed that, although the students' images of practical nurses were significantly different from their instructors', practical nursing instructors are significant others for their students.

The third research hypothesis--students' images of the nursing occupations will not converge during the initial, short period of training--is tenable. This conclusion is similar to those reached in other studies.

Based on the findings and discussion, it is concluded that the fourth hypothesis--the images of the nursing occupations for students who were employed as nursing aides prior to training differed from students without nursing aide experience--was not tenable. It is also concluded that students with previous nursing aide experiences did not agree on the images of the nursing occupations any more than did the students who did not have similar health field experiences.

Finally, it is tentatively concluded that the images of the nursing occupations as perceived by the continuing students and the students who dropped out between the first and fourth months of practical nursing training did not differ. It is speculated, however, that the reason for early leaving from practical nursing training may affect the drop-outs' perceptions of the images of the nursing occupations.

Limitations of This Study

1. The representativeness of the sample to the population may have been compromised by the observed differences in distribution of marital statuses of the subjects. If marital status was a primary determinate for a woman's decision to change her life style, as Mulvey (1963) contends, then a subject's marital status may affect her images of the nursing occupations. The actual effect that marital status may have had on occupational imagery was not assessed in this study.

2. The relatively few students from the Chicago Metropolitan Statistical Area may also impede generalizing the findings of this study to the population. The students from this area may perceive the nursing occupations' images differently than students from the more rural oriented cities in the state.

3. No attempt was made to ascertain or control on interschool differences. Relatively different recruitment and selection, policies, curricula, and local attitudes toward the health occupations may have resulted in different conclusions than those reached by this study.

4. The skewness of distribution of scores for some of the scales resulted, at least in part, in the depression of the intercorrelation matrix. The attenuation problem was probably due to the descriptive words and phrases not being absolute or purely bipolar.

5. Two scales were not included in the calculation of scores for the first factor. Besides lowering the reliability of the factor scores associted with Factor L, the validity of the description of the dimension may have been also reduced should meaningful association for the creative and organized scales be discerned.

6. The undefined nature of the fifth factor also reduces the dimensionality, therefore, ability to describe the images of the nursing occupations. Furthermore, only a sample of possible descriptive words and phrases were utilized. Other dimensions of evaluations for nursing occupations may have been derived if a different procedure was utilized to select items. One such method would be sentence completion by members of the nursing occupations and lay public.

7. The order of the factors is arbitrary. The factor numbers, therefore, were utilized only as an identification device and did not denote the majority or minority of the factors.

8. Deriving factor scores by summation of scales may have detracted from the orthogonality of the factor scores. In order to minimumize the probable interrelationship of the factor scores, an alternative technique for factor score computation would encompass the weighting of the scale values with beta-coefficients derived from multiple regression schemes utilizing factor loadings as criterion variables.

9. t-tests were utilized to test for differences between group means. The use of multifactor analyses of variance with repeated measures may have resulted in the formulation of somewhat different conclusions. Significant interactions among main effects may have also been observed. By using a series of t-tests, some of the derived statistical differences may be attributable to chance alone.

10. Finer distinctions on the students' previous health field experience may have resulted in the observation of differences in images of the nursing occupations. This limitation can be rectified by increasing the numbers of subjects with other than nursing aide experience.

11. The lack of differentiation between drop-outs' reasons for early leaving may have contributed to their equality with continuing students in images of nursing occupations. More precision on this variable may lead to conclusions quite different from what could have been made under the conditions for this study.

Implications for Further Study

1. Research is needed on the three nursing occupations' images as perceived by the practical nursing student after graduation and entry into employment. Criteria are ndeded for the evaluation of the images developed during the education and training of the practical nurse. Dissonance between behavior based on imagery at the time of graduation and those manifested at the employing institutions can result in conflict and confusion for the new practical nurse. Communication and job satisfaction could be greatly hindered by the dissonance.

2. Four dimensions for evaluating occupational images were identified in this study. Since the factors were derived from a sam le of descriptive scales, further study is needed to determine whether more than the four significant dimensions exist.

3. Further research is needed on the technique for measuring occupational images. One direction for study is the refinement of the descriptive words and phrases utilized in this study. A more profitable direction, however, may be the use of Thurstone or Likert scaling methods. Adoption of these techniques may alleviate many of the attenuation problems experienced with the method utilized in this study.

4. Only practical nursing students' perceptions of the nursing

occupations were ascertained in this study. However, the technique utilized should be applicable to the study of the images of all the health occupations as perceived by both students and practitioners in the health area. This technique also seems applicable for the study of other occupational groups.

5. Further study is needed to ascertain whether practical nursing instructors are significant others for their students. Coupled with the determination of "realistic" imagery, findings from such studies may have significant implications for education.

6. Information on the images of nursing occuaptions for male practical nurses may lead to improved recruitment practices. The services of male nurses are in great demand, but the numbers of male student nurses remains very low.

7. A major area of research on occupational imagery not considered a part of this study warrants further investigation. This area is the relationship of self and occupational images. One direction for the study of this problem is the relationship of consonance between self and occupational images and education and/or job satisfaction. Another possible direction for study is the use of occupational images in prediction schemes for student selection.

CHAPTER VIII

SUMMARIES OF PRIOR REPORTS

This chapter contains summary sections from Occupational Patterns and Functions of Employed LPN's and An Analysis of Selected Educational Programs in Practical Nursing. In addition summary sections of three sub-studies which were conducted in Illinois and Iowa provide supplementary information to the data obtained in the major studies. The sub-studies are: Iowa Practical Nursing Sub-Study, Practical Nursing in Iowa: A Profile, and Practical Nursing in Illinois: A Profile.

The supplementary studies were funded by the State Division of Vocational Education in Illinois and Iowa, while the major studies were funded by the Office of Education, U.S. Department of Health, Education and Welfare. The summary sections have been taken directly from the original studies, the pages of which are indicated at the end of each summary section.

For additional information, copies of these studies may be obtained through the ERIC system.

Iowa Practical Nursing Sub-Study

All of the subjects are women and the majority came from a rural background. Predominately, their fathers were farmers, their mothers were not employed outside the home, and they had from two to five siblings. On an average, they attained a higher level of education than their parents but none had completed a baccalaureate degree. Over one-half made their decisions to become practical nurses between the ages of 15 and 19 and first became acquainted with their preparatory program through mass media, particularly newspapers.

A large percentage of the group held at least one job before becoming licensed practical nurses and these jobs were primarily in health-related occupations. During enrollment in nursing programs, the majority were financially supported by parents and relatives and a minority worked part-time to help finance their nursing education. Slightly over one-third of the subjects were licensed as practical nurses on the basis of having attended a program in professional nursing. In 1965, one-fifth of the group were 19 years of age and by far the greatest number were between 20 and 29. Few were over 55. Eighty-five percent have been married at least three years. Three-fourths of the subjects have children and nearly one-half of these others have children who are all under six years of age.

Geographic mobility of practical nurses from place of birth to the location of their nursing preparatory program and between jobs since licensure is relatively low. They tended to go to nursing education

programs and to have been employed as nurses near their home communities. For the majority, past employment has been in general hospitals. In decreasing order of frequency, the remainder were employed in doctors' offices, nursing homes and psychiatric hospitals.

The vast majority of practical nurses ever licensed in Iowa continue to live in Iowa. Among those who do move out-of-state, "marriage" is given as the predominant reason. In late 1965 these subjects indicated they were not employed as practical nurses in Iowa. Six months later, when the data were collected for this study, about one-third of the group had returned to practical nursing in this State.

For those who continue not to be employed as practical nurses in Iowa, it appears there is little that outside sources can do to facilitate their return to employment at this time. Among reasons given for their present unemployment, "family responsibilities" far excels any other. The great majority also indicated their return to work hinges on this same factor but that as their children mature in age and family responsibilities lessen, they plan to return to employment as practical nurses. Salaries do not seem to be a major factor in their decision to return. Very few indicated they definitely do not plan to return to practical nursing in the future.

Marriage, with its accompanying potential mobility, and motherhood, with its accompanying responsibilities, will no doubt continue to influence the number of unemployed practical nurses. Many, however, will eventually return to active practice in this field. This cycle will unquestionably continue among practical nurses in Iowa.

The great majority are neither consistently nor permanently out of the practical nurse work force. Rather, they have been a comparatively stable group of workers to date. Over time, however, the aging process will demand prepared nurses for necessary replacements. Added to the present need for more available nursing service personnel in Iowa, a need which will continue and grow in the future, it is evident that the educational preparation of nurses for Iowa must be augmented.
(pages 39-41)

Practical Nursing in Iowa: A Profile

General Characteristics of Practical Nurses Licensed in Iowa. When compared with the general population of Iowa (1960 Census), the licensed practical nurse population in the State does not differ significantly in terms of place of birth. Notable, too, is the fact that the distribution of currently licensed practical nurses living within Iowa is approximately proportionate to the distribution of the State general population. The racial distribution is relatively proportionate to that found in the segment of the general Iowa population twenty years of age or older. As might be expected, only 1.6% of Iowa's licensed practical nurses are men.

The findings support the assumption that there is a trend for the licensed practical nurse population to be a progressively younger group. Over the 16 1/2 year period covered in this study, the median

age at initial licensure of those licensed on the basis of experience (waiver) was 50, whereas the median age of those licensed on the basis of having attended a nursing education program was 22. However, in 1965 when the median ages of these two groups were compared, the experience group had a median age of 64 while the median age of the education group remained relatively young, 29.

More practical nurses licensed by education had completed high school than had those in the experience group, yet the number who had pursued education beyond high school was greater in the experience group than in the education group.

When the mean scores on the state board examination were compared among four groups delineated by type and location of nursing preparation program attended, the results were found to be quite similar with the exception of one group. The deviant group consisted of subjects educated in out-of-state programs in professional nursing who had a mean score slightly higher than the other three groups. If the N were larger and this relationship still held, further investigation would be in order.

Currency of License. When age and currency of license were compared, a greater than statistically expected number of practical nurses in the 25-44 age group, and a smaller than statistically expected number in the 24-and-under category, had inactive licenses. Under closer scrutiny, however, this does not seem unreasonable since the responsibilities of marriage and family in the 25-44 age group account for the high rate of inactivity. The 24-and-under age group had an exceptionally low rate of inactivity. This may be explained by the fact that very seldom does a practical nurse let her license lapse prior to having held it active for at least three successive years following initial licensure.

When type and location of nursing program attended were compared with licensure status, marked differences were found among groups. The group licensed following completion of a program in practical nursing tended to keep their licenses active at a higher rate than did the group licensed after having completed a portion of a program in professional nursing. Practical nurses prepared in Iowa's urban areas were more likely to keep their licenses active than were those prepared in rural areas of the State. Among those graduated from programs in practical nurse education, Iowa graduates had a higher rate of license currency than did the out-of-state graduates.

Mobility and Stability. In terms of place of birth, the proportionate distributions for the two groups, experience and education, were very similar. With the movement of subjects between place of birth and location of general education, the urban areas gained. This is probably due to the ever-increasing tendency in the general population to gravitate toward urban areas.

The distribution of practical nurse programs in Iowa, when compared to the distribution of Iowa's general population, has changed markedly in the past few years. Prior to 1965 some areas in the State

produced a significantly smaller percentage of practical nurse graduates than their respective percentages of the State's general population would suggest. Since 1965, with the addition of nine (9) new programs in practical nursing, the distribution of these educational programs in Iowa now approximates the distribution of Iowa's general population.

In the migration of subjects from the time they completed their general education to the time they matriculated in a nursing education program, more came into the State than went out of the State. A large number of individuals from the Northern Rural Area migrated to other areas for their nursing preparation, and a significant percentage of these went out-of-state. A similar pattern of migration was noted in the Southern Rural Area.

During the period from attendance in a nursing program to residence at initial licensure, Iowa again profited in the exchange of subjects between states. Within Iowa, the Central Region did not gain by the movement of subjects during this interval.

Between location of nursing program attended and current residence, Iowa's gain of 14 licensed practical nurses seems to be significant in view of the fact that the U.S. Census Bureau lists the State's net out-migration as 134,000 for the period April 1, 1960 through July 1, 1964.

For the experience group, when age was compared with location of current residence within and outside Iowa, subjects over age 65 were less likely to live out of state than were those in other age groups. Indeed, those in the 45-64 age group had a higher than statistically expected frequency of out-of-state residency.

To determine the effect of mobility on the three Regions in Iowa, migration of the education group, with the exception of those licensed on the basis of having attended a program in professional nursing, was studied over four points in time: location of general education, location of nursing education program attended, residence at initial licensure, and current residence. The migratory trend in the licensed practical nurse population can best be determined by comparing the number of subjects in each region at the first and last points in time. In the interval between general education and current residence, the Northern and Southern Regions each had a net loss, one and four respectively, while the Central Region gained 311.

At the time of the data collection the number of address changes reported by the subjects since their initial licensure indicates a high degree of stability in residence.

Practical Nurse Replacement Projections for Iowa. Soon all of the practical nurses licensed on the basis of experience (waiver) will be inactive since they are approaching standard retirement age. The data show that the closer one is to retirement age, the greater the likelihood of license inactivity. Thus, the experience group, long the backbone of the entire practical nurse work force, is rapidly being depleted. In the future, due to the provisions of the Iowa Nurse

Practice Act, only those prepared in a nursing education program can be counted on to fill the gap in the practical nurse work force left by these retirees.

In addition, there is a higher than statistically expected rate of inactive licensure among subjects in the 25-44 age group. This is largely attributable to child-bearing and child-rearing responsibilities. Though the term of inactivity for an individual is usually temporary, the aggregate results represent a continuous drain on the supply of available licensed practical nurses.

These findings indicate that practical nurses must be prepared in Iowa in larger numbers not only to accommodate the above replacement needs, but also to meet the perpetual demand for more licensed practical nurses in our State. (pages 111-116)

Practical Nursing in Illinois: A Profile

General Characteristic of the LPN Group in Illinois. The licensed practical nurse population of Illinois differs significantly from the general population both in birth origins and areas where general education was gained. 51.4% were born outside Illinois; and 38.4% received general education in another state or territory - the largest percentage moved to Illinois before PN education. Although this study could not measure the exact time of move, comments strongly suggest that most came as a result of family moves to find greater economic opportunity.

In 1963-65, a higher proportion of non-white females were licensed as practical nurses than there were non-white females in the 1960 Illinois labor force. Of like significance is the even higher percentages of non-whites, 26.5%, in the LPN population. Furthermore acceptance in the employment situation appears to have been balanced for both groups as evidenced by the equivalent employment percentages. Finally, for both groups, white and non-white, this occupation provides an unusually high level of employment opportunity in health facilities and institutions.

Educational Background. Younger practical nurses have higher educational attainment before PN training than older ones. This observation is not surprising, however, and would have been expected considering increased educational opportunities for all youth in the last 20-30 years. Practical nursing is also drawing a selected group because of higher educational requirements in the Illinois Nursing Act to qualify for the licensing examination.

Comparison of state board examination scores, however, shows that the older women scored higher. If the examination accurately reflects nursing ability, it then appears that other factors may be as important, or more, than formal education. There is a suggestion in fact, that while no substitute for full professional education, previous experience in the health field as a nurse's aide may give a substantial assist to success in practical nursing education.

Also, additional success may result from general maturity and life experiences as well as from the formal program. The importance of this

observation is double. Further study is obviously needed to find and define possible relationships, but in the meantime, schools should not overlook the gains from admitting older and married women.

The average age of the new-education-based practical nurse has progressively decreased, possibly due to 1) increased public recognition and acceptance and 2) diminishing supply of interested and qualified older persons. Although the younger LPN may in total be available for employment longer than her older counterpart, her services may be postponed or interrupted by family obligations, such as childbearing or care of young children.

Mobility and Stability. A striking aspect of the practical nurse profile is geographical stability. Thus women who enter the occupation through educational programs tend to be enrolled in the school agency nearest their home or residence. These people tend not to change or take up temporary residence for the educational program; rather, they tend to stay in or return to the community of earlier residence.

Inward migration compensates for outward losses experienced by nearly all areas of the state. In general, Illinois benefited from a 6.3% gain in LPN's, primarily at the expense of adjoining states. The only exception was Other Metropolitan Areas, where 14% fewer LPN's currently resided than were trained there. The high ratio of married PN's also suggested moves will tend to be related to family or spouse change of employment of location.

An additional index of the stability of residence of licensed practical nurses was the finding that approximately half of all those licensed had not changed their address at any renewal period from the one stated at initial licensure. Because of this non-mobility, in planning comprehensive education of practical nurses, schools placed strategically throughout the state would provide a more effective use and distribution of resources. While many metropolitan areas and larger cities have established programs, no solution has been found for the rural areas of the state. The preponderance of older practical nurses in the rural areas and the dearth of educational facilities will not reduce shortages there. One avenue often proposed is to enlarge present facilities to insure proper numbers of graduates, but such a plan would not guarantee even distribution throughout the state.

Another primary attribute of the practical nurse is dedication. Whatever may be the motivation or reasons for this phenomenon, nursing schools, educators, and the public can be optimistic. Holding a PN license unquestionably provides economic opportunities that would not be as plentiful in areas where a high school diploma is a qualification. PN education is an efficient and socially acceptable as well as profitable way of gaining desirable status as a skilled worker.

Geographic Distribution. The LPN population was unevenly distributed throughout the state; metropolitan areas had proportionately more and rural fewer LPN's than would be predicted by the general population distribution. The average age of LPN's residing in rural

areas was higher than for their metropolitan counterparts. Whereas the Greater Chicago Areas and Other Metropolitan Areas could respectively expect within the next ten years a 26.9% and 30.9% reduction in total LPN's certified before 1966. The rural areas could very well lose about 41% in the same period. The question whether the currently existing practical nursing programs can replace these possible losses urgently requires further study. Statistical indications are that nurse-availability is barely holding its own on a worker basis, but that the state is apparently losing ground rapidly if population growth and quality of care are taken into account.

Motivation and Occupational Reasoning. Practical nurses and their employment patterns present a unique picture of occupational dedication - women educated in the occupation tend to seek and retain employment in health services and in the same geographical location. Further acquiring the PN special skills makes the transfer to other areas of health employment possible. While this study has not attempted to identify fully the motivational factors producing this dedication, they certainly include financial desire, satisfaction with nursing or desire to be productive and helpful.

Of all licensed practical nurses presently employed, 89.2% were full-time, 10.8% part-time. Only 20.6% were non-employed, many of these temporarily, or unknown. Of the 2.1% working outside the health field, higher salaries and convenient work schedules seem to be significant reasons.

Another striking aspect is the future work intentions. For the group as a whole, the employed expected to keep positions in the health field, the unemployed seek a return to practical nursing, and the part-time workers wish to accept full-time employment, when their responsibilities permit.

Implications of these observations are several. First, institutional, community, and national investments in practical nurse education produce a worthwhile return both in employment and in dedication of the group to public service. An individual, therefore, completing PN education and licensing stays employed except for temporary periods of home needs. This result suggests also, that for schools of practical nursing, selection of candidates to decrease drop-out rates will also help.

Further Education. Practical nurse training is often reviewed as terminal or as an end in itself. For seventy people, however, it appears to have been a step forward to further education, either professional or collegiate. It is suspected, though not yet actually measured in this study, that some others may seek additional specialized and supplementary courses in PN activities. Even though this study has not attempted to define causative or motivational factors, there is a suggestion that practical nursing may have been the first open door to post-high school education, together with an underestimate of ability.

The feasibility of implementing the "career ladder" concept through achievement and proficiency evaluations should be explored as a means of obtaining both additional quality and quantity of prepared personnel at

all levels with greater speed, efficiency, and flexibility. With the chronic shortages at all levels of skilled nursing personnel and with growing societal needs, such as exploration, at least on investigatory and experimental basis, should be both helpful and profitable.

Present Sources and Future Resources. At the expense of other states, Illinois has received 14.7% of its present practical nurse population after PN education. Still uncertain, however, is the degree to which Illinois will continue to realize a real net gain through inter-state mobility. Significant increases, therefore, will necessarily have to come from young women making early occupational-career choice during or after high school and older women whose responsibilities gradually decrease with maturity.

As another source of manpower the male nurse represents an untapped reservoir. Some men become practical nurses, but only a scant 2.0% of the Illinois total. Even though this is a vocation in which men can be readily and immediately employed, the scarcity of numbers suggests that the image of the PN is primarily feminine. Hence the choice of this occupation by men is relatively low, less than it could be. Also, nursing salaries tend to be significantly below levels ordinarily attractive to male heads of households. Possibilities of increasing enrollment of men in the occupation may well be worth investigation.

Return on Investment in Practical Nurse Education. The State of Illinois has the primary responsibility for providing the structure and support to meet the health needs of the public. An agency of the state, the Division of Vocational and Technical Education, administers federal and state funds appropriated for leadership, development and support of health-occupation education programs "at less than professional level or occupations not usually requiring a baccalaureate degree." Included are the semi-professional, technical, skilled and unskilled health workers. In the past, however, the Division has committed only a very small percentage and total of state money to the health occupations and only those federal funds specifically earmarked. Newer federal funds, however, may be used at the discretion of the Division. A significant increase of Division and other state resources allocated to leadership, development, teacher education, and support of health occupations education appears to be indicated. Relatively small previous investments in practical nursing have paid handsome dividends; additional support on a broader scale to all health occupations may well return in equal or greater proportions.

The application of resources to practical nursing education in Illinois has probably returned a greater dividend in health care per unit investment than in any other area. Returns have occurred at federal, state, community, and health-facility levels as well as to the individual participating in the program. Federal funds have been used primarily, administered through the Division, plus local funds provided by school districts. Hospitals have provided clinical facilities, and in some cases faculty, for return in prepared practical nurses. The return is good, for approximately 75% of PN graduates accept their first employment at an institution where they receive a part of their education.

Community investment, through local school systems returns a worker who remains in the community for long periods, often permanently and one who maintains a high level of employment. Rural and smaller communities also benefit from the practical nurse programs in the larger towns, which provide educational opportunity for residents of the surrounding area. These graduates then ordinarily return to their first residence to help provide health care. Federal funds invested in all states has helped to equalize educational opportunity and have assisted in development of prepared personnel. Even if those people migrate from state to state for employment, the national reservoir of nursing team resource personnel is still deepened and enriched.

Of all persons who enter practical nurse education programs, in Illinois, approximately 87% finished successfully and 97.4% of those who complete a PN school actually obtain a license to practice. This represents 84 of every 100 persons who originally entered, a much higher completion ratio than almost any other type of post-high-school education, where 50% drop-out rates are common. Further, once a PN license has been obtained, it is not only kept active, 90.4% in 1965, but 77% with a current license are actually employed in some form of health care. In addition, 27% of those who were not employed in the health field had returned to such employment within about six months and a further 70% of the same classification indicated an intention to return to future employment as LPN's.

In summary, approximately, 94% of all those with active licenses were either employed, only temporarily non-employed, or intend to return to employment in the health field. Included in the remaining 6% are those deceased, those suffering long-term personal disability or those with pressing responsibilities and those who already have advanced to higher levels of education or unemployment. Finally, the low 9.6% of all persons who have had an Illinois education-based license, but allowed it to expire by 1965 included those; who have not renewed their licenses in Illinois for several years, who are known to have moved out-of-state (315), and who have unknown current addresses, who are deceased, or who have other characteristics classifying them as unknown. The actual accountability is so high, however, that only a negligible potential supply remains that might be recruited into patient care.

In short, contributions of this Illinois survey have been to accumulate data which show LPN's in the state to be a stable, recognized and accepted, almost fully utilized segment of the health-services team. Students and graduates are getting younger, with more background in general education than in earlier years. Specific formal education programs have largely replaced experience as a basis for certification. Nevertheless, older women have in general scored better on licensing examination than their younger sisters. Because so few LPN's are unemployed in health services and because they work with such dedication close to the location of their education, little seemingly can be added to gain numbers from the group already trained and certified.

This seems to imply, however, that more can be done with expanded facilities and programs with attractive descriptions of the occupation and its skilled status to assist informed first career decisions. Also helpful may be flexible admissions and programs to include married and older students, and with work schedules to accommodate and adapt to the occasional demands or employment interruptions of family and children. (pages 146-155)

Occupational Patterns and Functions of Employed LPN's

An estimate of the current population of LPN's and their characteristics in Illinois and Iowa was obtained through selection of a ten percent sample of all persons who had ever been licensed in each of the states. Data were obtained from the records of the official licensure agencies. Subsequent follow-ups to all persons who: 1) had a current license, in the reference states, 2) obtained a license after completing an educational program, and 3) lived in the reference state provided employment data. From the follow-ups, 101 employment locations were selected as a sample of all such locations that might provide employment for one or more LPN's. In addition, employment and personal characteristics of LPN's were determined.

Tests for differences between the estimated populations and samples found the samples to be essentially representative except for over-representation of general hospitals with 500 bed capacity or over. A total of 941 personal interviews including 688 LPN's, were conducted at the 101 locations. Employment locations included all types, sizes and purposes. Interviewees at the locations were selected to include all types of duty assignments, shifts and services.

Data were obtained from administrator and directors of nursing pertinent to the employment location. The in-depth, individual interviews obtained personal, educational and occupational information from 688 LPN's, 129 PN's who were immediate supervisors of 129 of the LPN's and 123 experienced Aides working in the same units as some of the LPN's. All interviewees then performed a responsibility sort of a sample of 99 nursing function statements to determine the functions performed by LPN's and the level of responsibility for their performance. Each LPN then performed a modified Q-sort of the functions on the dimension of importance of the function in carrying out her role as a practical nurse in her present assignment.

General Characteristics of Illinois-Iowa LPN's. The trend toward an increasingly greater proportion of young LPN students, more pronounced in Iowa than in Illinois, was also reflected in the ages of the employed LPN's. Of the total, 22% were 24 or younger and 35.7% were 45 or over. Comparison of participation rates by women in the U.S. labor force and LPN's were similar except for the 25-34 age group where LPN's tended to maintain a relatively higher participation rate during the child-bearing years. White LPN's were a significantly older group than non-white, but no differences were found between whites and non-whites in maintaining an active license or participation in the labor force.

Of the 688 LPN's, 58.8% were married, 22.9% single, and 18.3% were divorced, separated, or widowed, designated as head-of-household. Illinois had a higher percentage of married, 62%, compared with Iowa, 48.4%, attributable, in part, to the large number of young LPN's in Iowa, of 158 single LPN's, 103 were in the less than 25 age group. Except for the youngest age group, two-thirds of the LPN's were married. Of the total, 35.1% had no children, 37.9% had one or two children, 13.7%, three children, and 13.3%, four or more. In each age category, the head-of-household was more likely to have children than the married. No differences were observed in the employment rates for persons with different numbers or ages of children.

While LPN's tended to come from large or medium size families, little relationship was found between sibling placement and choice of nursing as an occupation. Comparisons of family size of white and non-white LPN's revealed a tendency for non-white to be from larger families. Further investigation and study appears warranted to discover relationships between family size and occupational choice, patient-care orientation and size and placement in family, and financial limitation and size of family.

For both states, 73.1% of the LPN's had completed twelve years of formal education, approximately 22% had finished tenth grade and only one percent had an eighth grade or less education. By state, 93.7% of Iowa and 67% of Illinois LPN's had completed twelfth grade. This difference reflects both the younger age groups in Iowa and the recent high school graduation requirement in Iowa. The educational attainment of all LPN's exceeded the mean for both women in the national population and labor force.

An attempt was made to interview a larger proportion of male LPN's. Twenty were included in the interview sample. Most of the 20 were married, recent graduates, and present employment was considered an improvement over prior jobs. Approximately one-half were employed in hospitals under state or federal government administration. In their duties, twelve performed general functions and five were supervisors of five or more. Five of the twenty were non-white.

Motivation, Mobility, and Occupational Reasoning: A striking aspect of the employed practical nurse was her occupational dedication. Gainful employment in nursing was assumed very shortly after completion of the educational program with continued employment in the same position by over half of the group. The largest single influence for taking a position in a specific nursing assignment was prior clinical experience during a practical nurse education program. This reason was given more frequently by the younger groups. The reasons, otherwise, were primarily in the areas of opportunity, preference, and influence of others. Financial reasons were not frequent responses. Attitudes of LPN's about current job shows a change in position generally was viewed as an improvement and betterment more related to a move to another location. Evaluations of current job by clinical area and leadership role revealed physician's office nurses as the only assignment clearly seen as an improvement and more desirable. Further study is indicated to identify

factors contributing to personal motivation in work orientation which may contribute to mobility within the nursing field and a more clear identification of the complex of factors contributing to either personal motivation or job oriented preferences.

LPN-RN Agreement on LPN Nursing Activities. The performance of functions as reported by the LPN's and the paired LPN-RN groups provides guidelines for knowledges, responsibilities, and hierarchical relationships with health personnel. High agreement was found among the 688 LPN's, but closest agreement was found between the paired individuals. The supporting perception of the RN's essentially confirmed the LPN's descriptions. The validity and reliability was further substantiated by the continuity of employment of both. From the paired sorts, a clear identification of roles and responsibilities arose from the familiarity and supervision within the immediate working relationships. The wide range of functions and high degree of independence tends to negate clearly, defined lines between roles of LPN's and RN's. Considerable overlap of roles was readily apparent from these data.

A large group of supportive and patient-centered, basic nursing functions comprise the core or common activities across the practice of practical nursing. Monitoring, coordinating, observing and reporting are included in this central core. However, the majority of LPN's are also performing activities of a more complex or technical nature in each clinical area of assignment. Smaller but significant number are responsible for the full range of nursing activities in some specialty assignments and locations.

Curriculum Organization and Re-evaluation. Statistical analysis of the importance rankings of functions by LPN's provided conceptual clusters of activities and subsequent identification of roles. This framework along with the degree of responsibility in performance and the extent of functions performed should provide indices for evaluation of present curricula and organizational patterns for educating practical nurses. Actual performances and reports by the practical nurse in the performing role can be incorporated in formulation and identification of job descriptions and requirements.

The traditional approach to curriculum based around clinical areas seems to be a valid approach in many respects. The actual breadth of assignments and the levels of responsibility are greater than has been previously recognized. The diversity and expansion of roles will, however, necessitate inclusion of a wider area of experiences and skills not commonly in the basic programs. Familarity and competency in the identified roles may be obtained by a reorganization of curricula. Acquisition of these may be provided by pre-service or in-service programs.

The increasing number of LPN's in assignment levels ranging from team leader to supervisors reflects a need for in-service or on-the-job training.

Recommendations for broader inclusion of the preparation and giving out medications was substantiated by this Study. The percentages of LPN's giving medications as a part of their general activities with a high level of responsibility and the five percent who were specifically designated as medications nurses clearly requires inclusion in the basic curriculum. Another guage or estimate of the discrepancy between basic preparation and job expectancies or requirements was found in the evaluation of adequacy of preparation for current job by the LPN's' they were generally adequate except for the medications area.

Role Definitions. Data obtained from employed LPN's and their RN supervisors indicated differences in roles as defined by the practitioners and the formal statements by professional organizations. Statements of functions describe a practitioner directly operating under supervision of a RN or physician who is available for decisions. Employed LPN's, however, were functioning in all types of institutions and employment settings in and outside the general hospital where such direct supervision was not directly available of the job. The LPN's and RN's both reported considerably higher levels of responsibility for the practical nurse in all areas than has been previously recognized. Capability and competence in performance with the present level of preparation which included both pre- or in-service experiences was confirmed by their direct supervisors and discussions with directors of nursing service.

The most recent statement regarding educational programs in practical nursing by the National League for Nursing reiterates the limited nursing functions and a limited range of patient-care situations for LPN's (NLN, 1968). While a majority of LPN's practiced nursing in patient-care situations, the range of functions performed and the subsequent responsibility were broad and inclusive. Increasing numbers of practical nurses are in roles of assistance to physicians and administrative-supervisory capacities. Insistence upon narrow and unrealistic definitions of performance, contrary to observed and reported evidence by LPN's and RN's actually employed in the field, will contribute to inappropriate educational experiences for job requirements. (pages 211-216)

An Analysis of Selected Educational Programs in Practical Nursing

Forty-five programs in practical nurse education, 29 in Illinois and 16 in Iowa, were studied to determine their characteristics related to organizational structure, curriculum, faculty, student selection criteria and procedures, and perceptions of the role of the licensed practical nurse as held by faculty members.

Data were obtained through instruments completed by, and through personal interviews with, coordinators and instructional staff member(s) of each program. In addition, for the purpose of comparing nursing functions performed by employed LPNs (reported in Part I) with the emphasis given these functions in the educational program, the same card-sort procedures were utilized with the faculty group.

Selected Characteristics of Programs. Among the 45 programs, all but six were supported by public monies. Public administrative agencies included local school boards, area community colleges or vocational-technical schools, universities and public hospitals. This reflects the trend for educational costs to be borne by educational institutions supported by tax monies rather than by service institutions as has been prevalent in the past. The remaining six private programs were administered by church-supported hospitals.

The number of years the programs had been in operation ranged from one to 18. The majority of programs were established since the enactment of Public Law 911, the Health Amendments Act of 1965, which provided funds for practical nurse education.

Populations of the communities in which programs were located ranged from about 5,000 to 100,000 or more; the largest was the Chicago metropolitan area. The greatest number were located in cities of between 25,000 and 50,000 population.

During the year of the study, 1966-67, a total of 2,468 were enrolled in 75 classes of the 45 programs; 70% of the programs had fewer than 50 students. One class in each program was designated as its criterion class. The 45 criterion classes had a total of 1,350 students, representing 55% of the total 1966-67 enrollments. Criterion classes ranged in enrollments from 13 to 70.

The full-time equivalency (FTE) of the 318 faculty members who devoted time to the criterion classes, ranged from two to 12; the median number was 4.5. Based on FTE, the mean faculty-student ratio was 1:6.4.

Selected Characteristics of Criterion Class Faculty Members. Faculty members, all women, ranged in age from 22 to 71 and the great majority of them were married as opposed to single, widowed, separated or divorced. In general, they had achieved a higher level of educational preparation than their parents. Among faculty members, children ranged in numbers from none to more than eight and over one-half of the spouses were in occupations of a professional or semi-professional nature.

All but nine of the 318 were registered nurses. The highest level of nursing education for slightly over one-half of the registered nurses was at the diploma level. Of those with degrees, 60% held degrees in the nursing field. Regardless of present level of educational achievement, many were pursuing additional educational experiences through continuing education.

Faculty salaries were found to be higher in the publicly supported programs where instructors salaries ranged up to $9,500 and coordinators salaries to $11,500, higher than in the private programs, by $3,000 and $2,500 respectively. The median salary for full-time coordinators was $8,750 and for full-time instructors, $6,319.

About 20% of the faculty did not plan to return to their present faculty position following the criterion class year. Over one-half of this group planned to take another position of some type. Of those leaving, one-half were between the ages of 20 and 30, a highly mobile age group. Nearly two-thirds were married and were holding full-time faculty positions. This seems to be consistent with the low mean years

of employment (slightly over 2 1/2) and with the relatively high percentage of faculty employed for only one year prior to the study (nearly fifty percent). The combination of these factors indicates a highly mobile, short-tenured employment pattern among the younger faculty members. The continual flow of new instructors, resultant from this pattern, indicates a specific need for in-service teacher education activities on a continuing basis.

Selection of Students. Generally, the age range for admission to a program was 11 to 55. All programs required at least a tenth grade education or its equivalency; 42% required high school completion or its equivalency. No programs excluded applicants on the basis of race or religion.

All programs required a high school transcript, pre-tests, personal interviews and physical examination; most required selected immunizations. Relative to the physical examination, discussion with faculty members indicated that obesity was their main concern.

Application procedures reflected a pattern of mass pre-testing of applicants as a means of reducing the total amount of time required for personal interviews.

Most generally, final selection decisions were made by program faculty; in about one-fourth of the programs, however, they were made by an admissions committee including personnel outside the immediate faculty group of a program.

Curriculum. In all programs, curriculums were covered within a 52 week period; four weeks was the predominant vacation time allowed, usually occurring at holiday time, spring and terminally.

All programs had a basic phase, generally 16 weeks in length, with more classroom than clinical experience; the remaining weeks made up the advanced phase, with progressively expanding amounts of clinical experience. About three-fourths of the programs offered classroom and clinical experiences concurrently; and, seventy-six percent of the faculty members taught in both areas. There was a notable trend toward the integration of curriculum content as opposed to offering separate, isolated courses.

Most programs provided early clinical learning experiences for short periods of time, increasing them progressively, usually to 20 or more hours per week for the last 30 weeks. Few programs utilized other than daytime hours for clinical experiences. While students had experiences in all the usual types of areas, the medical-surgical area was the one used to the greatest degree.

Affiliating clinical agencies included general hospitals utilized by all programs; nursing homes, utilized by 60%; and psychiatric hospitals by 25%. Other types less frequently used were public health agencies, clinics, specialized hospitals, and school for well or handicapped children. Three-fourths of the total 99 affiliating agencies used by the 45 programs were located in the same city as the programs. The majority of the others were within 25 miles but one was as far away as 53 miles.

Students in 20 of the programs received no compensation of any kind; others received cash, laundry of uniforms, meals and/or housing.

Performance of Nursing Functions. Based on comparison of card sorts of nursing functions by employed LPNs and RN faculty members, there is a definite difference in the way faculty members view the role of the LPN and the way the employed LPN views her own role. Part I of the final report shows that LPNs are performing at a higher level than the National League for Nursing's statement on practical nursing of 1962 would indicate. Faculty members tend to emphasize content in their educational programs in keeping with the NLN statement, yet LPNs are actually performing at a higher level. This may be partially explained by the high turnover rate among younger faculty. Newer faculty replacements are less likely to be familiar with the performance of LPNs in the employment setting. Therefore they may tend to be more conservative in what they emphasize in the curriculum in comparison to actual performance of employed LPNs.

Increasing numbers of licensed practical nurses are in roles of assistance to physicians and administrative-supervisory capacities. Insistence upon narrow and unrealistic definitions of performance, contrary to observed and reported evidence of LPNs and RNs actually employed in the field, contributes to inappropriate educational experiences for job requirements. (page 133-136)

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APPENDIX A

OUTLINE OF
SURVEY AND DATA COLLECTION PLAN

APPENDIX A

OUTLINE OF SURVEY AND DATA COLLECTION PLAN

Following is an annotated outline of the time schedule and data collection instruments utilized throughout the project.

FOUNDATION PHASE

July 1965-February 1966

Instrument 1.1 - LPN - Basic Information

A 10% sample of all persons who had ever been issued a license as a practical nurse in each of Illinois and Iowa was obtained from the official files of the licensure agencies. Personal, social and demographic data were obtained from these records.

Instrument 1.2 - Follow-up of LPN

A phone and mail questionnaire follow-up was made to all LPNs whose license was currently in good standing, who were residents of Illinois or Iowa and who had been licensed after completing an approved educational program.

Current employment and employer data were obtained by this follow-up.

Instrument 2.1 - LPN Employment Location Interview

From the population of LPN employment locations identified by the Follow-up of LPNs (1.2) a stratified sample of employment locations was determined. An on-site interview was conducted with the administrator to obtain data concerning the employment location. (Instrument shown in Final Report Part I, Page 222.)

Instrument 2.2 - Nursing Personnel Interview Format

Personal interviews were conducted on-site by project personnel with selected LPNs, RNs who were the immediate supervisor of the LPNs and experienced nurse aides who were assigned to the same unit as the LPNs. (Format and coding shown in Final Report Part I, Pages 223-7.)

Instrument 2.3 - Q-Sort of LPN Functions

99 functions, each on a separate card, were sorted by each of the individuals interviewed (2.2) into a modified normal distribution. Methodology and statements reported in Final Report Part I.

APPLICANT TO PN SCHOOL DATA

January 1966-December 1966

Data collected for this phase of the Project were obtained by or under the direction of the staff at each PN program. Each program utilized their own procedures and instruments and included some common instruments provided by the Project. Results of tests were reported directly to the Project or obtained from the school records by Project personnel.

Instrument 3.1 - (PACE) Pre-Admission and Classification Examination

A multi-factor aptitude-ability test standardized for use in selection of PN students. Published by the National League for Nursing, 10 Columbus Circle, New York, New York.

Instrument 3.2 - Otis Gamma Form EM, Quick Scoring Test of Mental Ability

IQ test - The Psychological Corporation, 304 East 45th Street, New York, New York, 10017.

Instrument 3.3 - Local PN School Application Form

Each school used their own form. All obtained many common items of information. Instrument 3.3 and 3.4 in combination obtained data concerning age, family, employment history, educational background, financial ability to attend school, and general comments by the interviewer. Project personnel reviewed all forms and obtained data from these records in the program files.

Instrument 3.4 - Local PN School Interview Form

Each school used their own form. See description in 3.3. Personal and employment references were commonly requested and in the applicant's file.

All schools required a physical examination report. After extensive review of forms and completed examination data and consultation with many faculty members, it was determined that information from the physical examination was so general as not to be classifiable or usable for purposes of this study.

Instrument 3.5 - School Transcripts

Transcripts were requested of most students and on file. Transcripts were often incomplete or missing for a number of reasons: (1) applicants had applied prior to high school graduation, (2) some applicants had taken GED equivalency exams, and (3) in other cases a letter from the school certifying to high school graduation or tenth grade completion (in Illinois) met the legal requirements for program entry.

INITIAL SCHOOL-STUDENT DATA COLLECTION

September 1966-February 1967

The initial school-student data collection at each PN program was conducted by the Project staff during the first two months of the student's program. Most were between the third and seventh weeks. The instruments were administered to students in group sessions.

Instrument 4.1 - Name, Address and Permission Form

Each student gave written permission for participation in the study. A current address plus a permanent address for follow-up purposes were obtained.

Instrument 4.2 - Dailey Vocational Guidance Test Battery

Developed by John T. Dailey and published by the Houghton - Mifflen Company, Boston.

This battery is comprised of a set of three tests developed for guidance use, particularly those who are interested in pursuing occupationally oriented curricula.

Three sub-tests of the Dailey Battery were administered to all students.

Instrument 4.21 - Secretarial-English Test

This test includes spelling, punctuation, and English usage.

Instrument 4.22 - Spatial Visualization Test

This test yields a measure of the ability to visualize objects presented in two-dimensional drawing as they would appear in three-dimensional space.

Instrument 4.23 - Technical and Scholastic Test

Three areas are included in this test and a score for each as well as a total score is reported. Included are scores for electrical, mechanical and scholastic ability.

Instrument 4.3 - (not assigned)

Instrument 4.4 - Student Information Form I and IA

These instruments were developed by the PNS staff. Responses to questions in these forms were recorded directly on automatic scoring sheets by the students. PNS staff read each item and answered questions with the group. Form I requested data concerning personal-social-educational background, family data, and information concerning their choice of entering PN training. Form IA contained open-ended questions concerning other educational preparation and reasons for entering a PN program.

Some items from the Resident Student Blank (5.2) were slightly modified for inclusion in Form I and repeated in Student Information Form III (6.2).

Instrument 4.5 - PN School Faculty Interviews

Personal interviews were conducted with the school faculty while students were in group testing sessions. Instrument 2.2 was modified for this use.

Instrument 4.6 - Faculty Q - Sort of LPN Functions

Faculty members sorted the function statements according to the relative emphasis they gave each in the PN program curriculum. See Final Report Part II.

Instrument 4.7 - Criterion Class Data I

This Instrument was designed to obtain data concerning the PN program, including: organization, administration, student selection criteria and procedures, operating policies, etc. Information obtained through interview with the program coordinator.

Instrument 4.8 - Application Sequence

The great variation of steps and sequences utilized in admitting an individual to a class made it necessary to use a standardized format for obtaining this information.

SECOND SCHOOL-STUDENT DATA COLLECTION

December 1966-May 1967

The second data collection visit was scheduled in most cases during the fourth month that the students were enrolled; some were slightly before or after. This period coincided with the more common transition in balance from classroom to clinical experiences. Again, all data collection sessions were scheduled in advance and conducted by PNS personnel.

Instrument 5.1 - TUC - Three Units of Content

Developed and standardized by the National League for Nursing, 10 Columbus Circle, New York, New York.

This test has been developed to be used as an achievement measure for PN students at the close of the basic or classroom phase of the PN program. The test was obtained by each program directly from the NLN and administered after the appropriate content had been taught. Many of the schools were utilizing an integrated, classroom and clinical, approach whereby it was not appropriate to administer this test until near the end of the program. Results were reported directly to the PNS and the school.

A high positive correlation with the state licensure exam has been found.

Instrument 5.2 - RSB - Resident Student Blank, Form B

This instrument was developed by Kenneth B. Hoyt as a part of the Specialty Oriented Student Research Program. Professor Hoyt was then at the University of Iowa but is now at the University of Maryland.

The instrument is designed to obtain student reactions to and their evaluation of the school, the educational program, their housing and living arrangements and other student reactions.

Instrument 5.3 - Student Information Form II

This instrument was developed by the PNS staff. The items were designed to gather additional information relative to family, financial situation, transportation and choice of this PN program over other choices that might have been made. An attempt was made to obtain information on those out-of-school factors that may interfere with or interrupt the education program. Another series of items were included to determine the actual costs to the student in attending the PN program.

Instrument 5.4 - Student Evaluation Form I

This instrument was developed by the PNS staff. Achievement measures from the school records, ratings by the staff of each student on practical nursing characteristics and a ranking of all students in each class into deciles were obtained from the school records by each staff member.

Each student was evaluated on each of three criteria (classroom achievement, clinical achievement, and patient relationships) by each instructor who had adequate contact to be able to give a rating.

Instrument 5.5 - Minnesota Vocational Interest Inventory (MVII)

By Kenneth E. Clark, published by the Psychological Corporation, 304 East 45th Street, New York, N.Y. 10017.

This test is designed to provide a profile of interest patterns for those in non-professional occupations. Most standardization has been accomplished with men on the basis of interests in common with those employed in the occupation.

Scales for twenty-one specific occupations and nine area scales have been developed. Results for each are reported. Of particular interest to this study were the hospital attendant occupational scale and the area scales for health service and clean hands.

Instrument 5.6 - Vocational Development Inventory

Developed by John O. Crites, Department of Guidance, University of Iowa, Iowa City.

Preliminary findings from this instrument indicate a meaningful relationship with the degree of vocational maturity, realistic occupational choices and decisions.

Instrument 5.7 - Practical Nursing Program Inventory

A series of forms were developed to obtain data concerning the characteristics of the PN education programs themselves and data concerning the criterion class.

Descriptive information was obtained and classified relative to: staff, facilities, clinical affiliations, student services and policies, curricular materials, administration, finance and other characteristics that may differentiate among programs and be related to selected instructor and/or student characteristics. The information was obtained from each staff member and the school records.

Instrument 5.71 - School Historical Data

This form was used to obtain a chronological record of the number of applicants, students and graduates for each year since the school opened. Shown in appendix of Final Report Part II.

Instrument 5.72 - Faculty Data

This form was used to obtain similar historical information for faculty members. The instruments and instructions for completion were taken to the school at the first visit, reviewed with the coordinator and completed from the school records and returned to the Study Office.

Instrument 5.8 - Program Organization Data

Each individual instructor completed this instrument which was designed to assess the student and staff policies, student organizations, administrative structure and policies and procedures in program development.

THIRD SCHOOL-STUDENT DATA COLLECTION

July 1967-December 1968

The third and final data collection visit was conducted during the final month of scheduled classes at each school. Some return visits were necessary to interview staff members or obtain missing data.

Instrument 6.1 - NIP - Nursing Including Pharmacology

Published by the National League for Nursing, 10 Columbus Circle, New York, N.Y. 10019.

This instrument has been developed and standardized for use as a final achievement test to be used by the local schools. It has been shown to have a high positive correlation with achievement on the state license examination. This test was furnished to the schools and administered by them.

Instrument 6.2 - Student Information Form III

This instrument was developed by the Project staff. Items concerning their expected employment and school reactions and satisfactions

were assessed. Instrument was administered by PNS staff.

Instrument 6.3 - Student Evaluation Form II

This instrument was developed by the Project staff and was a modification of Instrument 5.4 - Student Evaluation Form I. Final staff evaluations and information from student records were obtained.

Instrument 6.4 - Staff Perceptions of PN Program

These instruments were developed by the Project staff to obtain the perceptions, reactions and recommendations of each individual staff member concerning the students, graduates, the PN school curriculum, and the PN role and working relationships in the employment situations.

FOLLOW-UP OF APPLICANTS, DROP-OUTS AND GRADUATES

January 1967-June 1968

Instrument 7.1 - Applicant Follow-up Questionnaire

A mail questionnaire was sent to all applicants who did not enroll in one of the criterion classes for which they applied. Information concerning their employment, reasons for not entering and future plans were obtained.

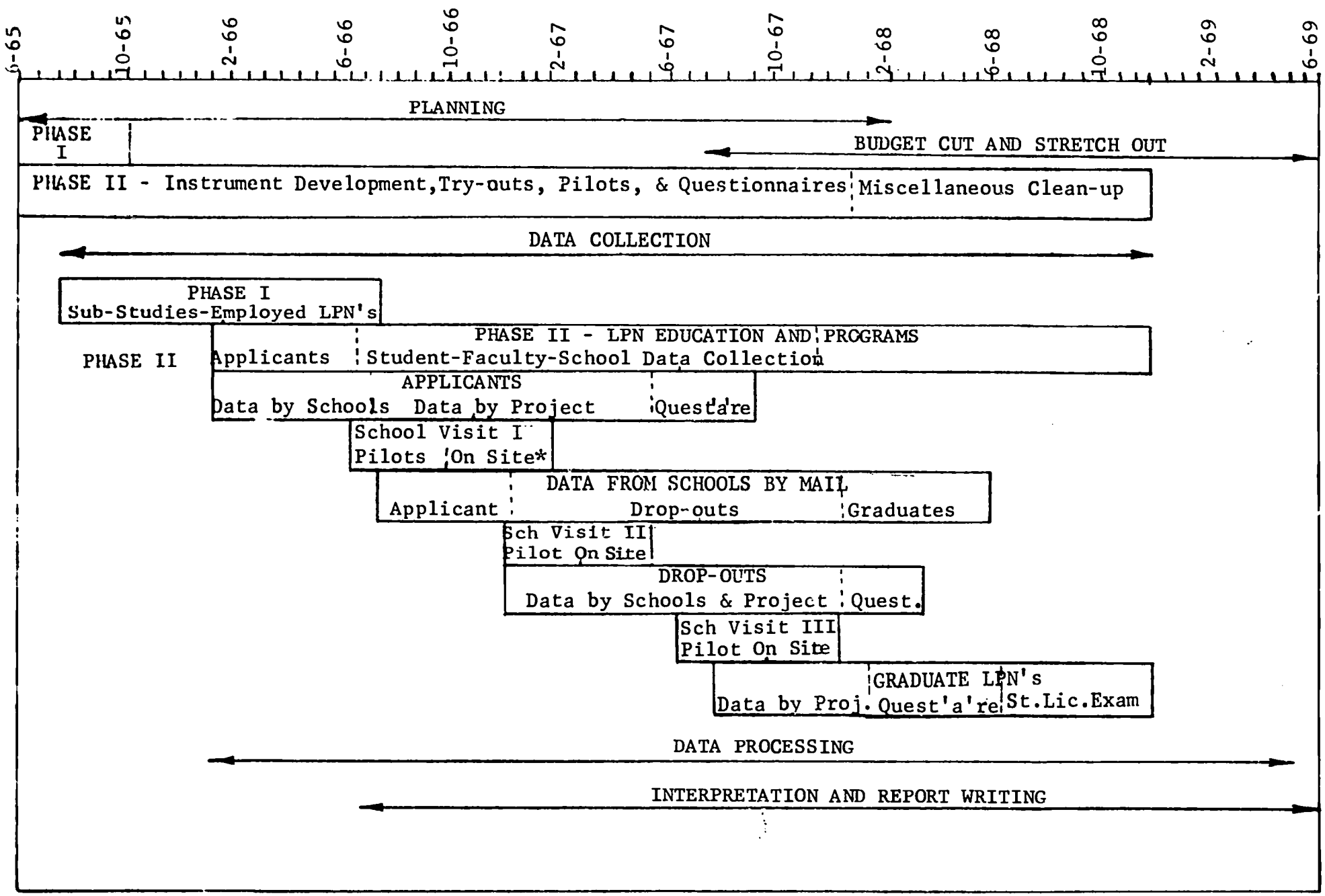
Instrument 7.2 - Drop-out Follow-up Questionnaire

Two devices were utilized to obtain information concerning enrolled students who did not graduate. The school provided a report giving the reasons for dropping out. A mail questionnaire was also sent to each drop-out to obtain information similar to that in Instrument 7.1.

Instrument 7.3 - Graduate Follow-up Questionnaire

A mail questionnaire was sent to all graduates approximately two months after graduation. Information was requested concerning employment, employment plans, income, assignment, satisfaction with employment and PN program evaluation.

CHART PRACTICAL NURSING STUDY SUMMARY OF ACTIVITIES



* On-site - Data collection for enrolled students, faculty and program at each participating school.

APPENDIX B

DATA TABLES

APPLICANTS WHO DID NOT ENROLL

TABLE B.1: APPLICATION STATUS AND AGE, MARITAL STATUS, AND NUMBER OF DEPENDENTS

MARITAL STATUS AND NUMBER OF DEPENDENTS	Unknown Status	Unknown Age	PRELIMINARY STATUS 18-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55 and Older	Total	SECONDARY STATUS 18-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55 and Older	Total	COMPLETED STATUS 18-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55 and Older	Total
SINGLE																																
1-3	1		1	2						1		4	1	3		1	1	1				7	1	2	1	2						6
None	98		58	28	1	4	3	2		1		96	146	45	7	1	2	2	2	1	1	207	205	78	11	1	3	3	2	3	1	307
Unknown	1		11	5								16	13	10	1	2					2	29	26	15	2	1	2		1			47
Total	100		70	35	1	4	3	2		1		116	160	58	8	4	3	3	3	1	3	243	232	95	14	4	5	3	3	3	1	360
MARRIED																																
1-2	5			3	1		3	1	5	2		15		8	2	1	1	3	4	1	3	23		8	6	7	1	3	3	1	2	31
3-4	2				4	6	1	2				13			2	3	2	1	2		3	13		2	2	3	6	7	2	1		23
5 or more						1	3				1	5		1	1	5	3	3	1			14				3	4		1	1		9
None	25		1	7	7	6	7	5	6	9	3	51	2	11	3	5	3	3	6	4	2	39	5	9	10	8	7	12	6	5	1	63
Unknown	14		5	7	14	9	16	12	10	5	9	87	6	11	9	4	8	6	6	3	9	62	2	13	13	11	14	8	14	8	7	90
Total	46		6	17	26	22	30	20	21	16	13	171	8	31	17	18	17	16	19	8	17	151	7	32	31	32	32	30	26	16	10	216
HEAD OF HOUSEHOLD																																
1-2	3			2	2	1						5		4	4		3	1	3		2	17		3	2	5	2	4	3	5		24
3-4	3			1	2	4	1	1				9		2	3						2	7	1		1		2	1	2	1		8
5 or more	1														2		1				1	3			1	2		1				4
None	3						1	1	4	2		8						1	2	1		4		4		2		2	3	2		13
Unknown	2			1	2	1	1		1	1		7		3	4		1		1	3	3	15		1	3	1	2	1	1	2	1	12
Total	12			4	6	6	3	2	5	3		29		9	12		5	2	6	4	6	40	1	8	7	10	6	9	9	10	1	61
UNKNOWN MARITAL STATUS	38	148	5	4	6	3	3	4	4	1	1	173		6					3		9	18	3	2	2	2			2	4	12	27
Iowa Totals	166	1	17	6	5	1	2		1	2		5	113	45	18	8	6	10	11	8	3	222	106	54	11	5	13	6	4	8	3	210
Illinois Totals	30	147	64	54	34	34	37	28	29	19	14	460	55	51	20	14	19	12	16	12	23	222	137	81	42	43	30	36	36	25	21	451
Total in Category	(196)	(148)	81	60	39	35	39	28	30	21	14	495	168	96	38	22	25	22	27	20	26	444	243	135	53	48	43	42	40	33	24	661
% in Category			23.3	17.3	11.2	10.0	11.2	8.0	9.0	6.0	4.0	(347)	37.8	21.6	8.6	5.0	5.6	5.0	6.0	4.5	5.9	(444)	36.8	20.4	8.1	7.3	6.5	6.4	6.0	5.0	3.5	(661)

TABLE B.2: NUMBER OF DEPENDENTS OF NON-ENROLLED

	TOTAL NUMBER OF DEPENDENTS						NUMBER OF CHILDREN AT HOME					
	Illinois		Iowa		Total		Illinois		Iowa		Total	
NUMBER	N	%	N	%	N	%	N	%	N	%	N	%
1-2	111	16.8	24	3.9	135	11.6	141	20.7	52	9.9	193	16.0
3-4	59	8.9	15	2.4	74	6.4	79	11.6	25	4.8	104	8.6
5 or more	33	5.0	13	0.4	36	3.1	40	5.9	6	1.2	46	3.8
None	459	69.3	459	93.9	918	78.9	421	61.8	440	84.1	861	71.6
Total Known	662	100.0	501	100.0	1163	100.0	681	100.0	523	100.0	1204	100.0
Total Unknown	500		133		633		481		111		592	
Total	1162		634		1796		1162		634		1796	

	NUMBER UNDER SIX						NUMBER 6 - 12					
	Illinois		Iowa		Total		Illinois		Iowa		Total	
NUMBER	N	%	N	%	N	%	N	%	N	%	N	%
1-2	118	18.9	35	6.9	153	13.5	101	16.1	29	5.7	130	11.5
3-4	18	2.9	2	0.3	20	1.8	29	4.6	9	1.8	38	3.3
5 or more	1	0.1	0	0.0	1	0.1	6	0.9	1	0.2	7	0.6
None	486	78.0	471	92.7	957	84.6	492	78.3	468	92.3	960	84.6
Total Known	623	99.9	508	99.9	1131	100.0	628	100.0	507	100.0	1135	100.0
Total Unknown	539		126		665		534		127		661	
Total	1162		634		1796		1162		634		1796	

Total Applicants = 1796

Data available on N of each table.

TABLE B.3: RESPONSES ON FOLLOW-UP QUESTIONNAIRE BY TYPE OF SCHOOL AND APPLICATION STATUS

TYPE OF SCHOOL	STATUS OF APPLICATION: Un-known	Prelim-inary	Secondary	Completed	TOTAL	TOTAL APPLICANTS	ILL.	IOWA	% Response
Loc. H.S. Bd.	22	146	142	197	507	988	837	151	51.3
Area Voc. School	34	21	50	29	134	190	30	160	70.5
MDTA	1	3	25	27	56	117	117	---	47.9
Junior College*	49	24	21	66	160	241	52	189	66.4
Hospital	27	6	43	60	136	206	73	133	66.0
Other	0	19	19	4	42	54	54	---	77.8
Total Responses	133	219	300	383	1035				
Total Category	196	495	444	661		1796	1163	633	
Percent in Category	67.8	44.2	67.6	57.9	57.6				

*University program is included in this category.

TABLE B.4: INTERCORRELATIONS: CHARACTERISTICS OF NON-ENROLLED

Raw Score	Mean	St'd Dev.	No.	OTIS 1	PACE Comp. 2	PACE S&H 3	PACE Gen. Info. 4	PACE Arith. 5	PACE Gen. Int. Total 6	PACE Verb. 7	PACE Read 8	PACE Verb & Read Total 9	GATB Spat 10	GATB Verb. 11	GATB Num. 12	GATB Gen. Int. 13	GATB Mot. Coor 14	GATB Mecr. 15	Grade Point Ave 16
1.	97.2	12.1	r	-															
			N	-															
2.	48.3	27.71	r	.75															
			N	799															
3.	49.8	27.9	r	.59	.87	-													
			N	728	796	-													
4.	49.2	26.7	r	.64	.89	.78	-												
			N	727	796	798	-												
5.	50.1	29.4	r	.72	.83	.67	.68	-											
			N	727	796	798	797	-											
6.	49.4	27.9	r	.72	.97	.91	.92	.85	-										
			N	729	798	799	799	798	-										
7.	48.2	27.3	r	.65	.88	.72	.75	.62	.78	-									
			N	725	796	796	796	795	797	-									
8	45.1	27.7	r	.65	.85	.66	.79	.60	.73	.74	-								
			N	716	787	787	786	787	787	786	-								
9.	46.7	27.2	r	.70	.93	.75	.77	.65	.81	.94	.92	-							
			N	719	791	789	789	789	791	789	786	-							
10.	97.0	20.6	r	.41	.36	.36	.22	.45	.35	.35	.29	.29	-						
			N	43	43	43	43	43	43	43	43	43	-						
11.	98.4	12.4	r	.65	.66	.53	.62	.49	.62	.69	.55	.67	.25	-					
			N	105	114	115	115	114	115	115	112	114	.62	-					
12.	96.2	15.6	r	.60	.54	.45	.46	.71	.59	.36	.37	.35	.50	.54	-				
			N	30	28	28	28	28	28	28	27	28	43	43	-				
13.	94.8	13.1	4	.74	.67	.58	.58	.70	.67	.59	.51	.57	.49	.72	.86	-			
			N	108	116	117	117	115	117	117	114	116	66	230	43	-			
14.	104.9	17.4	r	.25	.05	.07	.14	.08	.06	.04	.13	.06	.25	.25	.33	.32	-		
			N	106	114	115	115	113	115	115	112	114	62	227	42	229	-		
15.	109.0	17.0	r	.30	.15	.18	.21	.17	.22	.05	.04	.04	.25	.31	.67	.36	.36	-	
			N	105	113	114	114	112	114	114	111	113	60	225	42	227	226	-	
16.	2.9	.73	r	.17	.14	.10	.08	.15	.12	.10	.12	.12	-.05	.04	.11	.14	.12	.08	-
			N	457	485	484	483	484	485	484	480	484	35	100	25	101	100	100	-
17.	3.0	.95	r	.14	.15	.12	.09	.16	.14	.14	.15	-.08	-.09	-.01	.01	.01	.04	.15	.08
			N	339	361	358	359	359	360	359	355	359	31	71	24	72	71	71	532

r = Pearson product moment correlation

N = Number of cases upon which r is based

PACE scores are based on percentages.

TABLE B-5: PERSONS INFLUENCING STUDENTS TO APPLY TO PN SCHOOL BY TYPE OF SCHOOL

TYPE OF SCHOOL	Unknown	LPN Grad of This School	Practical Nurse	Registered Nurse	Nurse Aide	School Counselor	Employment Service Counselor	Parents, Relatives, Husband or Wife	Co-worker Friend	Other Person	TOTAL
Voc. Pgm. by H. S.	85	62	53	72	23	43	20	56	59	4	507
Area Voc. School	20	20	8	19	5	21	5	13	22	1	134
MDTA	8	16	6	4	1	1	9	2	6	3	56
Junior College	26	24	16	16	5	28	5	17	17	6	160
Hospital	21	18	14	22	4	21	1	11	20	4	136
Other	9	2	6	9	1	4	1	5	5	0	42
Total in Category	169	142	133	142	39	118	41	104	129	18	1035
% in Category	--	16.4	15.4	16.4	4.5	13.6	4.7	12.0	15.0	2.0	86.6

TABLE E.6: REASONS FOR NON-ENTRY: SCHOOL RECORDS BY REASONS GIVEN ON FOLLOW-UP

REASONS FROM RESPONDENTS	REASONS BY SCHOOL: N=374 STUDENT INITIATED WITHDRAWL: Other Education	Applicant Request Delay	Marriage	Illness-Self	Pregnancy	Family Responsibility	Spouse Job Change	Transportation	Finance	Change of Objectives	Other General	N=203 NO DECISION: Pending & Other	Late Application	Inadequate Space	N=458 SCHOOL DENIAL: By Employment Service	Other & Unknown	General	Personal	Testing	Inadequate Education	Physical	TOTAL	%
PERSONAL AND FAMILY																							
Unspecified	9	5	1	2	0	4	1	2	3	1	52	28	11	13	4	8	8	7	128	7	9	308	29.8
Lack of Child Care	2	2	1	0	0	0	0	0	2	0	13	5	0	1	2	1	0	1	9	0	2	42	4.1
Family Illness	0	0	0	1	0	3	0	0	1	0	2	8	2	2	0	0	0	0	5	0	0	23	2.2
Personal Illness	0	2	0	1	0	0	0	0	0	0	7	4	1	1	0	1	0	1	5	1	2	25	2.4
Influence of Husband	0	0	1	0	0	0	0	0	2	0	7	3	0	1	0	0	0	0	1	0	0	16	1.5
Spouse Job Change	2	0	0	0	0	2	0	0	0	1	9	7	0	1	0	0	0	0	5	2	0	29	2.8
Change of Marital Status	0	0	0	0	2	2	1	0	0	0	9	4	0	0	0	0	0	0	8	0	1	28	2.7
Marriage (or plans for)	3	0	2	0	1	0	0	0	0	1	20	11	2	2	1	1	1	2	16	0	0	61	5.9
Family Responsibilities	2	4	0	0	0	2	0	3	0	2	22	9	22	1	0	3	1	3	19	1	0	71	6.9
Other	16	8	1	3	2	4	2	0	10	1	109	47	14	23	2	11	11	19	116	5	28	432	41.7
Total	34	21	6	7	6	17	4	5	18	6	250	126	32	45	9	25	21	33	312	16	42	1035	100.0
QUALIFICATIONS AND OBJECTIVES																							
Other	9	3	2	0	1	5	0	0	2	0	46	21	13	13	0	6	5	8	51	2	7	194	18.7
Selection Tests	1	1	0	0	0	0	0	1	0	0	4	1	1	2	1	0	1	1	18	1	2	35	3.4
Inadequate Education	2	0	0	1	2	0	0	0	2	0	24	13	1	6	2	2	1	3	37	1	2	99	9.6
Advised by PN School	2	4	0	2	0	1	0	1	1	0	15	8	1	7	2	3	2	3	61	3	2	118	11.4
Other Employment	2	0	0	1	0	3	1	0	0	1	35	21	3	3	2	3	2	2	21	1	3	104	10.1
Refresher Course	2	1	0	0	0	2	0	1	1	0	11	6	1	2	0	3	1	0	41	4	4	82	7.7
Changed Objectives	16	12	4	3	3	6	3	2	12	5	115	56	12	12	2	8	9	16	83	4	22	405	39.1
Total	34	21	6	7	6	17	4	5	18	6	250	126	32	45	9	25	21	33	312	16	42	1035	100.0
STATUS OF APPLICATION																							
Unknown	4	1	0	0	1	2	3	0	0	0	40	14	2	6	4	1	9	8	37	1	0	133	12.8
Preliminary	5	2	1	1	0	2	0	0	1	1	58	71	6	1	0	1	2	2	28	6	31	219	21.2
Secondary	10	8	2	3	4	5	0	2	7	3	90	32	13	15	0	1	1	5	90	5	4	300	29.0
Completed	15	10	3	3	1	8	1	3	10	2	62	9	11	23	5	22	9	18	157	4	7	383	30.0
Total	34	21	6	7	6	17	4	5	18	6	250	126	32	45	9	25	21	33	312	16	42	1035	
%	3.3	2.0	0.6	0.7	0.6	1.6	0.4	0.5	1.7	0.6	24.2	12.1	3.2	4.3	0.9	2.4	2.0	3.3	30.1	1.5	4.0		100.0

TABLE B.7: APPLICANTS REASONS FOR NON-ENTRY

STATUS AND TYPE OF SCHOOL	PERSONAL AND FAMILY											QUALIFICATIONS AND OBJECTIVES							
	None Specified	Child Care	Family Illness	Personal Illness	Influence of Husband	Spouse Change of Job	Marital Status	Marriage	Family Responsibilities	Other Personal	Total	Other Qualifications	Selection Tests	Inadequate Education	Advised by PA School	Obtained Employment	Refresher Course	Changed Objectives	Total
UNKNOWN																			
Loc. H.S. Bd.	5	0	1	0	0	2	1	3	1	10	22	2	1	3	0	3	0	13	22
Area Voc. School	10	2	0	2	0	1	1	1	2	15	34	4	3	1	7	5	1	13	34
Junior College	17	0	1	1	3	1	1	3	2	20	49	13	5	5	1	4	4	17	49
MDTA	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
Hospital	9	0	0	1	0	0	1	0	1	15	27	6	1	1	4	2	2	11	27
Other																			
Total	42	2	1	4	3	4	4	7	6	60	133	25	10	11	12	14	7	54	133
PRELIMINARY																			
Loc. H.S. Bd.	37	16	4	7	1	3	5	2	12	59	146	24	2	10	8	22	11	69	146
Area Voc. School	6	2	1	1	1	3	0	1	0	6	21	5	0	1	2	3	2	8	21
Junior College	3	2	1	1	0	3	0	4	0	10	24	8	0	0	2	3	0	11	24
MDTA	0	0	0	0	0	0	0	0	2	1	3	2	0	0	0	1	0	0	3
Hospital	0	0	0	0	0	1	1	0	0	4	6	1	0	1	0	1	1	2	6
Other	2	0	1	1	1	1	1	2	2	8	19	5	0	2	0	2	2	8	19
Total	48	20	7	10	3	11	7	9	16	88	219	45	2	14	12	32	16	98	219
SECONDARY																			
Loc. H.S. Bd.	49	3	2	3	4	4	4	6	15	52	142	26	6	16	15	12	15	52	142
Area Voc. School	14	1	0	1	0	2	0	3	0	29	50	13	3	2	9	6	2	15	50
Junior College	3	0	1	0	0	2	0	5	2	8	21	3	0	2	6	4	0	6	21
MDTA	9	2	1	0	1	1	1	0	3	88	25	3	0	4	0	2	1	15	25
Hospital	15	0	0	1	0	0	1	4	1	21	43	10	0	7	6	4	2	14	43
Other	7	0	0	0	2	0	0	1	1	8	19	0	0	1	4	3	4	7	19
Total	97	6	4	4	7	9	6	19	22	126	300	55	9	32	40	31	24	109	300
COMPLETED																			
Loc. H.S. Bd.	48	8	8	3	2	3	9	9	22	75	197	28	8	22	23	13	25	78	197
Area Voc. School	9	0	0	0	0	1	1	3	2	13	29	5	0	4	3	7	4	6	29
Junior College	21	2	3	1	1	1	0	5	2	30	66	13	5	5	7	2	1	33	66
MDTA	8	2	0	2	0	0	1	2	1	11	27	5	0	3	7	2	0	10	27
Hospital	24	1	0	1	0	0	0	7	0	27	60	16	1	6	13	4	3	17	60
Other	1	1	0	0	0	0	0	0	0	2	4	1	0	2	1	0	0	0	4
Total	121	14	11	7	3	5	11	20	27	158	383	68	14	42	53	32	35	136	383
Total Category	308	42	23	25	16	29	28	61	71	432	1035	193	35	99	117	109	82	397	1035
% Category		5.7	3.2	3.4	2.2	4.0	3.9	8.4	9.8	49.4	(727)	18.6	3.4	9.6	11.3	10.5	7.9	38.4	

TABLE B.8: MOST RECENT EMPLOYMENT OF NON-ENROLLED BY STATUS AND TYPE OF SCHOOL
(N=1235)

STATUS AND TYPE OF SCHOOL	Unknown	Professional and other	Housewife	Skilled Health Related	Skilled Health Areas	Skilled Non-health	Semi-Skilled Health Related	Semi-skilled Health related	Semi-skilled Non-health	Unskilled Non-health	Unskilled Health related	Sales	Waitress and General	None	TOTAL
PRELIMINARY															
Local H. S. Bd.	257		67			2	4	19		9	3	1	1	5	368
Area Voc. School	6	1	1			2		9	3	2	2	1		5	32
Junior College	9				1	2	3	14	2	2	1	1	2	7	44
MDTA	8							4	1	2			1		17
Hospital							1	3		1				2	7
Other	1					2	7	7	2	3		3	1	1	27
Total	281	1	68		1	8	15	56	8	18	8	6	5	20	495
SECONDARY															
Local H. S. Bd.	66	2	7	2		1	4	65	6	24	9	10	6	19	221
Area Voc. School	2	1		1		2	2	27	1	11		3	7	12	69
Junior College	1	3			2	2	2	9	1	4		1	4	7	36
MDTA	8		2		1	1	1	17		3		4	1	4	42
Hospital	25						2	12				2		14	55
Other	4	1		1	1	2		5		5				2	21
Total	106	7	9	4	4	8	11	135	8	47	9	20	18	58	444
COMPLETED															
Local H. S. Bd.	104	2	52			6	16	85	3	34	11	7	7	41	368
Area Voc. School	10					1		17				3	3	10	44
Junior College	4	1				6	5	40	7	11	2	2	5	15	98
MDTA	6	1	2	1		1	4	21		4	1	1	1	14	57
Hospital	4				2	3	3	23	6	9	3	3	10	22	88
Other	1							1		3	1				6
Total	129	4	54	1	2	17	28	187	16	61	18	16	26	102	661
UNKNOWN															
Local H. S. Bd.	3	2	1		2	2	1	13	2	6	2		1	10	45
Area Voc. School	3		1			1	1	11		6				8	31
Junior College	10		4		2	3		23	2	5		2	3	9	63
MDTA								1							1
Hospital	29	1	2	1				14		2	1		2	4	56
Other															
Total	45	3	8	1	4	6	2	62	4	19	3	2	6	31	196
Total in Category	561	15	139	6	11	39	56	440	36	145	38	44	55	211	1796
% in Category		1.2	11.2	0.4	1.0	3.2	4.4	35.5	3.0	12.0	3.1	3.6	4.4	17.0	100.0

Percentages based on known case total - shown in brackets ( ).

TABLE B.9 STATUS OF APPLICATION OF NON-ENROLLED BY TYPE OF SCHOOL AND TYPE OF PREVIOUS HEALTH EXPERIENCE

STATUS OF APPLICATION AND TYPE OF PN SCHOOL	Unknown	Nurse Aide or Unlicensed PN	Health Related Incidental Pt. Contact	Home Health Care Work	Candy Striper	Adult Health Vol. Work	Student Nursing Club	Red Cross First Aid Work	Other	None	TOTAL w/o N	TOTAL w/N
UNKNOWN												
Local H. S. Board	4	15			2		1		1	8	27	31
Area Voc. School	6	17	1		1	1	1		5	13	39	45
Junior College	15	23	1		2	1		1	2	18	48	63
MDTA	1											1
Hospital	32	14							1	9	24	56
Other												
Total	58	69	2		5	2	2	1	9	48	138	196
% Health*	--	76.6	2.2		5.5	2.2	2.2	1.1	10.0		99.8	(90)
% Known**	--	50.0	1.4		3.6	1.4	1.4	0.7	6.5	34.8	99.8	(138)
PRELIMINARY												
Local H. S. Board	314	27	3		1				4	19	54	368
Area Voc. School	3	11			2		1		4	11	29	32
Junior College	6	15	2		1			3	1	16	38	44
MDTA	10	4								3	7	17
Hospital		3								4	7	7
Other	4	10	1						1	11	23	27
Total	337	70	6		4		1	3	10	64	158	495
% Health	--	74.5	6.4		4.3		1.0	3.2	10.6		100.0	(94)
% Known	--	44.3	3.8		2.5		0.6	1.9	6.3	40.5	99.9	(158)
SECONDARY												
Local H. S. Board	67	58	13	5	3		2	1	5	67	154	221
Area Voc. School	2	27								40	67	69
Junior College	1	15	1			1			2	16	35	36
MDTA	5	20	2	1						14	37	42
Hospital	20	15			3		3		2	12	35	55
Other	2	6	1							12	19	21
Total	97	141	17	6	6	1	5	1	9	161	347	444
% Health	--	75.8	9.1	3.2	3.2	0.5	2.7	0.5	4.8		99.8	(186)
% Known	--	40.6	4.9	1.7	1.7	0.3	1.4	0.3	2.6	46.4	99.9	(347)
COMPLETED												
Local H. S. Board	155	83	9	3	8	4	1	5	4	96	213	368
Area Voc School	4	20	1		1					18	40	44
Junior College	14	46	2	2	2			1	1	30	84	98
MDTA	5	26	6	3						17	52	57
Hospital	11	26	5		2		1			43	77	88
Other		2	1		1					2	6	6
Total	189	203	24	8	14	4	2	6	5	206	472	661
% Health	--	76.3	9.0	3.0	5.3	1.5	0.8	2.3	1.9		100.1	(266)
% Known	--	43.0	5.1	1.7	3.0	.8	0.4	1.3	1.1	43.6	100.0	(472)
Total	681	483	49	14	29	7	10	11	33	479		1796
% Category	--	75.8	8.6	2.5	4.3	0.9	1.4	1.8	4.3		(546)	

Percentages based on known case totals shown in brackets ( ).

* % Based on those with prior health experiences.
** % Based on all known cases, with and without prior health experiences.

w/o N = without unknown employment included
w/N = with unknown employment included

TABLE 8.10: LABOR FORCE AND NON-LABOR FORCE ACTIVITIES AT TIME OF APPLICATION AND FOLLOW-UP

ACTIVITIES AT TIME OF FOLLOW-UP

LABOR FORCE ACTIVITIES

ACTIVITIES AT TIME OF APPLICATION / LABOR-FORCE		Unspecified F-T	Unspecified P-T	Professional and Other F-T	Professional and Other P-T	Tech. Health F-T	Tech. Health P-T	Skilled Health F-T	Skilled Health P-T	Skilled Non-Health F-T	Skilled Non-Health P-T	Semi-Skilled Non-Health F-T	Semi-Skilled Non-Health P-T	Semi-Skilled Health F-T	Semi-Skilled Health P-T	Unskilled Non-Health F-T	Unskilled Non-Health P-T	Unskilled Health F-T	Unskilled Health P-T	Sales F-T	Sales P-T	General Waitress F-T	General Waitress P-T	Sub-Total by F-T and P-T F-T	Sub-Total by F-T and P-T P-T	Total Labor Force
Unspecified	F-T	5												1										5	1	6
	P-T	2	1							1				1	1							1		5	2	7
Professional and Other	F-T			7						1						2								10		10
	P-T							1										1						1	1	2
Tech. Health	F-T					1								1										2		2
	P-T																					1		1		1
Skilled Health	F-T							3	1					7		1								11	1	12
	P-T													8										8		8
Skilled Non-Health	F-T	2						1		7	2	1	1	7										18	3	21
	P-T										3	1		1	1					2		2		6	4	10
Semi-Skilled Non-Health	F-T											32	1	10	1	1				1		2		46	2	48
	P-T											2	2	3				2				2		9	2	11
Semi-Skilled Health	F-T	4								1		2		147	12	3		3						160	12	172
	P-T	2												11	6	2		1		1		2		19	6	25
Unskilled Non-Health	F-T	1						1		1				5	1	9				1				18	1	19
	P-T													1	1		6					1		2	7	9
Unskilled Health	F-T													1				5						6		6
	P-T																		1						1	1
Sales	F-T													1						4				5		5
	P-T																				1				1	1
Waitress General	F-T													1								4	1	5	1	6
	P-T																						1		1	1
Sub-Totals	F-T	12		7		1		5	1	10	2	35	2	180	15	16		8		6		6	1	286	21	307
	P-T	4	1					1		1	3	3	2	25	9	2	6	3	2	3	1	9	1	51	25	76
NON-LABOR FORCE																										
Unemployed		7	2					3		10	1	34	1	36	2	10	2		1	2	3	5		107	12	119
Housewife		1		2	1					2		3	2	11	3	2		1	1	2	2	1		25	9	34
Unknown		2						3		1				1				1						8		8
Other		3	2					2		10	1	12		14		3	1			1		2	1	46	6	52
Sub-Totals		13	4	2	1			8		23	2	49	3	62	5	15	3	2	2	5	5	8	1	186	27	213
Follow-up Totals		29	5	9	1	1		14	1	34	7	87	7	267	29	33	9	13	4	14	6	23	3	523	73	596

TABLE B.10: (CONT'D) LABOR FORCE AND NON-LABOR FORCE ACTIVITIES AT TIME OF APPLICATION AND FOLLOW-UP

ACTIVITIES AT TIME OF FOLLOW-UP

NON-LABOR FORCE ACTIVITIES

ACTIVITIES AT TIME OF APPLICATION / LABOR FORCE		EDUCATION							NON L - F				Total Non-Labor Force Activities	Total at Application
		College General	Health RN and Tech.	PN	Commercial	Short Term Health	General	Sub-Total Education	Unemployed	Housewife	Unknown	Other		
Unspecified	F-T			1		1		2	3	3		2	8	16
	P-T				1			1						8
Professional and Other	F-T											1	1	11
	P-T													2
Tech. Health	F-T													2
	P-T													1
Skilled Health	F-T			1				1				3	4	17
	P-T													8
Skilled Non-Health	F-T	1		1				2		2			2	25
	P-T													10
Semi-Skilled Non-Health	F-T			2				2	18	4		1	23	73
	P-T			1	1			2	1	2			3	16
Semi-Skilled Health	F-T	3	4	10		2	2	21	2	27	3		32	225
	P-T	1	1		1	1		4	4	9	2		15	44
Unskilled Non-Health	F-T								1	1			3	22
	P-T	1	1	1			1	4	1				1	14
Unskilled Health	F-T								3	2	1		6	12
	P-T													1
Sales	F-T				1	1		2	1				1	8
	P-T								2	2	1		5	6
Waitress General	F-T					1		1	1				1	8
	P-T									1		1	2	3
Sub-Totals	F-T	4	4	15	1	5	2	31	29	40	4	7	81	419
	P-T	2	2	2	3	1	1	11	8	14	3	1	26	113
NON-LABOR FORCE														
Unemployed		1	5	1	3	1	1	12	45	27	2	4	78	209
Housewife			1	1			2	4	4	83		1	88	126
Unknown			2	4	1	1		8	1	1	34	1	37	53
Other		11	10	6	1	2	5	35	11	11		6	28	115
Sub-Total		12	1	12	5	4	8	59	61	122	36	12	231	503
Follow-up Totals		18	24	29	9	10	11	101	98	177	43	20	338	1035

APPENDIX C

CHARACTERISTICS OF ENROLLED STUDENTS - GRADUATES AND DROPOUTS

TABLE C.1: AGE BY TYPE OF SCHOOL

TYPE OF SCHOOL		AGE CATEGORY 18-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55+	Unknown	Total
Local H. S. Bd.	N	120	182	32	22	46	40	27	20	11	5	505
	% Row	23.8	36.0	6.3	4.4	9.1	7.9	5.3	4.0	2.2	1.0	
	% Col.	32.5	39.8	30.5	3.9	46.9	44.9	34.2	41.7	50.0	35.7	
Area Voc. School	N	54	50	8	8	7	13	9	6	4	-	159
	% Row	34.0	31.4	5.0	5.0	4.4	8.2	5.7	3.8	2.5	-.-	
	% Col.	14.6	10.9	7.6	11.6	7.1	14.6	11.4	12.5	18.2	-.-	
Junior College	N	54	58	12	7	8	10	17	9	4	-	179
	% Row	30.2	32.4	6.7	3.9	4.5	5.6	9.5	5.0	2.2	-.-	
	% Col.	14.6	12.7	11.4	10.1	8.2	11.2	21.5	18.7	18.2	-.-	
MDTA	N	50	88	41	26	30	19	21	12	2	7	296
	% Row	16.9	30.7	13.9	8.8	10.1	6.4	7.0	4.0	0.7	2.4	
	% Col.	13.6	19.3	39.0	37.7	30.6	21.3	26.6	25.0	9.1	50.0	
Hospital	N	78	65	8	4	5	4	3	-	-	1	168
	% Row	46.4	38.7	4.8	2.4	3.0	2.4	1.8	-.-	-.-	0.6	
	% Col.	21.1	14.2	7.6	5.8	5.1	4.5	3.8	-.-	-.-	7.1	
Other	N	13	14	4	2	2	3	2	1	1	1	43
	% Row	30.2	32.6	9.3	4.7	4.7	7.0	4.7	2.3	2.3	2.3	
	% Col.	3.5	3.1	3.8	2.9	2.0	3.4	2.5	7.1	7.1	7.1	
Total	N	369	457	105	69	98	89	79	48	22	14	
	%	27.3	33.9	7.8	5.1	7.3	6.6	5.9	3.6	1.6	1.0	

TABLE C.2: RACE AND MARITAL STATUS BY TYPE OF SCHOOL

TYPE OF SCHOOL		MARITAL STATUS Single	Married	Sep., Wd. Div.	Unknown	Total	RACE White	Nonwhite	Total
Local H. S. Bd.	N	277	166	57	5	505	456	49	505
	% Row	54.9	32.9	11.3	1.0		90.3	9.4	
	% Col.	35.0	42.3	38.5	27.8		37.6	35.6	
Area Voc. School	N	92	52	14	1	159	155	4	159
	% Row	57.9	32.7	8.8	0.6		97.5	2.5	
	% Col.	11.6	13.2	9.5	5.6		12.8	3.0	
Junior College	N	111	52	15	1	179	175	4	179
	% Row	62.0	29.0	8.4	0.6		97.8	2.2	
	% Col.	14.0	13.2	10.1	5.6		14.4	2.2	
MDTA	N	132	100	56	8	296	223	73	296
	% Row	44.6	33.8	18.9	2.7		75.3	24.7	
	% Col.	16.7	25.4	37.8	44.4		18.4	53.3	
Hospital	N	147	15	4	2	168	164	4	168
	% Row	87.4	8.9	2.4	1.2		97.6	2.4	
	% Col.	18.6	3.8	2.7	11.1		13.5	2.9	
Other	N	32	8	2	1	43	39	4	43
	% Row	74.4	18.6	4.7	2.3		90.7	9.3	
	% Col.	4.0	2.0	1.4	5.6		3.2	2.9	
Total	N	791	393	148	18	1350	1212	138	1350
	%	48.2	29.1	11.0	1.3		89.8	10.2	

TABLE C.3: INFLUENCE ON STUDENT TO ENTER PN EDUCATION

OCCUPATIONAL GROUP		WITH WHOM DID YOU FIRST DISCUSS BECOMING A PN STUDENT										Total		WHO INFLUENCED YOU MOST IN BECOMING A PN								Total	
		Unknown	Parent	Friend	Employer	Spouse	Child	Relative	Sibling	Co-Worker	Other	N	%	Unknown	Parent	Friend	Employer	Spouse	Child	Relative	Sibling	Co-Worker	Other	N	%
Unknown	N	27	157	97	2	138	9	26	12	3	5	477	35.3	27	77	54	5	30	4	23	10	5	11	246	16.2
	% Row	5.9	32.9	20.3	0.4	28.9	1.9	5.5	2.5	0.6	1.0			1.0	31.3	2.0	2.0	12.2	1.6	9.4	4.1	2.0	4.5		
	% Col.	66.7	42.2	46.4	4.3	86.8	47.4	47.3	31.6	3.3	1.6			9.8	40.3	22.0	10.4	68.2	22.2	27.4	20.8	3.4	4.4		
Prof. Health	N	-	2	2	4	-	-	1	-	-	31	40	3.0	-	2	4	1	1	1	1	1	1	26	38	2.8
	% Row	-	5.0	5.0	10.0	-	-	2.5	-	-	77.5			-	5.3	10.5	2.6	2.6	2.6	2.6	2.6	2.6	68.4		
	% Col.	-	0.5	1.0	8.7	-	-	1.8	-	-	9.7			-	1.0	1.6	2.1	2.3	5.6	1.2	2.1	0.7	10.5		
RN	N	-	11	35	18	1	6	10	13	55	38	187	13.9	-	22	64	22	2	5	29	18	84	69	315	23.3
	% Row	-	5.9	18.7	9.6	0.5	3.2	5.3	7.0	29.4	20.3			-	7.0	20.3	7.0	0.6	1.6	9.2	5.7	26.7	21.9		
	% Col.	-	3.0	16.7	39.1	0.6	31.6	18.2	34.2	61.1	11.9			-	11.5	26.1	45.8	4.5	27.8	34.5	37.5	56.8	27.8		
PN School Staff	N	-	-	-	2	-	-	-	-	-	28	30	2.2	-	-	-	-	-	-	-	-	-	8	8	0.7
	% Row	-	-	-	6.7	-	-	-	-	-	93.3			-	-	-	-	-	-	-	-	-	100.0		
	% Col.	-	-	-	4.3	-	-	-	-	-	8.8			-	-	-	-	-	-	-	-	-	3.3		
LPN	N	-	13	43	4	-	2	8	8	17	14	109	8.1	-	16	74	7	1	1	14	13	36	21	183	13.6
	% Row	-	11.9	39.5	3.7	-	1.8	7.3	7.3	15.6	12.8			-	8.7	40.4	3.8	0.5	0.5	7.7	7.1	19.7	11.5		
	% Col.	-	3.5	20.6	8.7	-	10.5	14.5	21.1	18.9	4.4			-	8.4	30.2	14.6	2.5	5.6	16.7	27.1	24.3	8.5		
LPN Grad of This School	N	-	3	13	-	1	2	-	-	9	7	35	2.6	-	1	24	-	1	3	2	1	5	12	49	3.6
	% Row	-	8.6	37.1	-	2.9	5.7	-	-	25.7	20.0			-	2.0	49.0	-	2.0	6.1	4.1	2.0	10.2	24.5		
	% Col.	-	0.8	6.2	-	0.6	10.5	-	-	10.0	2.2				0.5	9.8	-	2.3	16.7	2.4	2.1	3.4	4.8		
Skilled Through Non-Skilled Health	N	-	16	5	-	4	-	3	2	5	1	36	2.7	-	13	8	-	4	-	5	3	10	-	43	3.2
	% Row	-	44.4	13.9	-	11.1	-	8.3	5.6	13.9	2.8			-	30.2	18.6	-	9.3	-	11.6	7.0	23.3	-		
	% Col.	-	4.3	2.4	-	2.5	-	5.5	5.3	5.6	0.3			-	6.8	3.0	-	9.1	-	6.0	6.3	6.8	-		
Other Health Specialties	N	-	2	7	9	-	-	3	1	1	22	45	3.3	-	2	7	9	-	3	4	1	5	15	46	3.4
	% Row	-	4.4	15.6	20.0	-	-	6.7	2.2	2.2	48.9			-	4.3	15.2	19.6	-	6.5	8.7	2.2	10.9	32.6		
	% Col.	-	0.5	3.3	19.6	-	-	5.5	2.6	1.1	6.9			-	1.0	2.9	18.8	-	16.7	4.8	2.1	3.4	6.0		
Prof. Non-Health	N	-	6	1	4	1	-	1	-	-	8	21	1.5	-	3	3	1	-	1	-	-	-	3	11	0.8
	% Row	-	28.6	4.8	19.0	4.8	-	4.8	-	-	38.1			-	27.3	27.3	9.1	-	9.1	-	-	-	27.3		
	% Col.	-	1.6	0.5	8.7	0.6	-	1.8	-	-	2.5			-	1.6	1.2	2.1	-	5.6	-	-	-	1.2		
Teacher or Counselor	N	1	6	2	2	4	-	1	-	-	125	141	10.4	-	1	3	1	2	-	1	-	1	74	83	6.1
	% Row	0.7	4.3	1.4	1.4	2.8	-	0.7	-	-	88.7			-	1.2	3.6	1.2	2.4	-	1.2	-	1.2	89.2		
	% Col.	2.4	1.6	1.0	4.3	2.5	-	1.8	-	-	39.1			-	0.5	1.2	2.1	4.5	-	1.2	-	1.0	29.8		
State Employment Service Personnel	N	-	1	-	-	-	-	-	-	-	38	39	2.9	-	1	-	1	-	-	-	-	-	9	11	0.8
	% Row	-	2.6	-	-	-	-	-	-	-	97.4			-	9.1	-	9.1	-	-	-	-	-	81.8		
	% Col.	-	0.3	-	-	-	-	-	-	-	11.9			-	0.5	-	2.1	-	-	-	-	-	3.6		
Semi-Prof. Through Non-Skilled Non-Health	N	-	91	2	-	8	-	1	-	-	2	104	7.7	-	28	3	1	2	-	1	-	1	-	36	2.7
	% Row	-	87.5	1.9	-	7.7	-	1.0	-	-	1.9			-	77.8	8.3	2.8	5.6	-	2.8	-	2.8	-		
	% Col.	-	24.5	1.0	-	5.0	-	1.8	-	-	0.6			-	14.7	1.2	2.1	4.5	-	1.2	-	0.7	-		
Other	N	13	64	2	1	2	-	1	2	-	1	86	6.4	249	25	1	-	1	-	4	1	-	-	281	20.8
	% Row	15.1	74.4	2.3	1.2	2.3	-	1.2	2.3	-	1.2			88.6	8.9	0.4	-	0.4	-	1.4	0.4	-	-		
	% Col.	30.9	17.2	1.0	2.2	1.3	-	1.8	5.3	-	0.3			90.2	13.1	0.4	-	2.3	-	4.8	2.1	-	-		
Total	N	42	372	209	46	159	19	55	38	90	320	1350		276	191	245	48	44	18	84	48	148	248	1350	
	%	3.1	27.6	15.5	3.4	11.8	1.4	4.1	2.8	6.7	23.6		100.0	20.4	14.1	18.1	3.6	3.3	1.3	6.2	3.5	11.0	18.4		100.0

TABLE C.4: PRIMARY REASON FOR TAKING PN TRAINING

STATE and TOTAL	INFLUENCE		OPPORTUNITY				PERSONAL							OTHER			TOTAL
	Persons non-Health	Persons in Health	General	For Educ.	For Advance.	For Security	General	Desire for Educ.	Desire to do Something Prod.	Desire to Help People	Pref. for Nursing	Pref. for Religion	Pref. PN Trng. and/or Duties	Finan. Need	Job. Satisfaction	Unknown & Misc.	
	GRADUATES																
Illinois	2	2	30	23	31	37	2	40	16	206	92	5	58	16	55	2	617
Iowa	1	0	36	13	13	17	63	8	6	159	47	2	0	24	43	7	439
TOTAL	3	2	66	36	44	54	65	48	22	365	139	7	58	40	98	9*	1056
%	0.3	0.2	6.3	3.4	4.2	5.1	6.1	4.5	2.1	34.6	13.2	0.6	5.5	3.8	9.2	0.9	100.0
	DROP-OUTS																
Illinois	0	0	15	11	9	13	1	11	11	87	27	1	12	10	16	19	243
Iowa	0	0	4	1	1	3	7	3	2	15	4	0	0	0	3	8	51
TOTAL	0	0	19	12	10	16	8	14	13	102	31	1	12	10	19	27**	294
%	0.0	0.0	6.5	4.1	3.4	5.4	2.7	4.8	4.4	34.7	10.5	0.3	4.1	3.4	6.5	9.2	100.0

* 8 misc. reasons
**All 27 unknown

TABLE C.5: RANK AND GRADE POINT AVERAGE IN LAST HIGH SCHOOL CLASS OF GRADUATES AND DROP-OUTS BY STATE AND TYPE OF SCHOOL

GRADUATES

TYPE OF SCHOOL	% Graduates in Each Category	Total N	Total %	RANK IN LAST HIGH SCHOOL CLASS - BY QUARTER: STUDENT ESTIMATE Unknown	1st	2nd	3rd	4th	FROM FILES Unknown	1st	2nd	3rd	4th	GRADE POINT AVERAGE IN LAST HIGH SCHOOL CLASS: STUDENT ESTIMATE Unknown	A	B	C	D-F	FROM FILES Unknown	A	B	C	D-F
Area Voc School	89.9	143	13.5	1	15	64	60	3	44	16	20	46	17	1	4	51	86	1	9	6	49	74	5
Loc. H. S. Bd.	79.0	398	37.7	5	55	176	144	18	177	34	69	83	35	5	16	182	191	4	99	16	104	157	22
Junior College	88.8	159	15.0	0	17	86	54	2	51	14	31	47	16	0	3	69	86	1	15	5	63	66	10
MDTA	65.3	194	18.4	0	30	77	82	5	103	14	25	36	16	0	7	87	99	1	73	8	39	64	10
Hospital	82.7	139	13.2	0	25	66	44	4	21	21	42	39	16	0	10	66	63	0	11	5	56	58	9
Other	53.5	23	2.2	0	0	6	17	0	4	2	6	6	5	0	0	4	19	0	2	0	2	19	0
Total N		1056	100.0	6	142	475	401	32	400	101	193	257	105	6	40	459	544	7	209	40	313	438	56
Ill. Sub-total	63.8	618	58.5	4	74	270	246	24	286	45	96	127	64	4	21	269	321	3	176	23	131	253	35
Iowa Sub-Total	89.6	438	41.5	2	68	205	155	8	114	56	97	130	41	2	19	190	223	4	33	17	182	185	21

DROP-OUTS

Area Voc. School	16	5.4	3	1	6	6	0	6	0	3	3	4	3	0	5	8	0	2	0	5	7	2
Loc. H. S. Bd.	106	36.1	8	10	31	50	7	62	5	11	14	14	7	1	34	62	2	47	0	9	39	11
Junior College	20	6.8	1	2	11	5	1	6	0	2	8	4	2	0	4	14	0	2	0	6	12	0
MDTA	103	35.0	10	7	36	42	8	67	5	4	13	14	10	2	42	45	4	54	3	10	25	11
Hospital	29	9.8	3	3	8	15	0	9	1	6	6	7	2	1	12	13	1	6	0	6	16	7
Other	20	6.8	1	1	7	8	3	11	0	0	3	6	1	0	7	11	1	7	0	1	5	7
Total N	294	100.0	27	23	99	126	19	161	11	26	47	49	25	4	104	153	8	118	3	37	98	38
Ill. Sub Total	243	82.7	22	18	78	107	18	149	8	14	32	40	20	4	88	123	8	112	3	20	71	37
Iowa Sub-Total	51	17.3	5	5	21	19	1	12	3	12	15	9	5	0	16	30	0	6	0	17	27	1

TABLE C.6A: GPA* BY TYPE OF HIGH SCHOOL PROGRAM

GRADUATES

TYPE H. S. PROGRAM	N	%	GRADE POINT AVERAGE* UNKNOWN	A	B	C	D	F	TOTAL N	%
Unknown	(12)	----	7	0	3	2	1	0	(6)	----
College	622	59.5	106	23	186	278	28	1	516	61.4
General	422	40.5	97	17	124	158	23	3	325	38.6
N	1044	100.0	210	40	313	438	52	4	841	100.0
%				4.7	37.0	51.7	6.1	0.5	100.0	

DROP-OUTS

Unknown	(24)	----	15	0	2	5	1	1	(9)	----
College	120	44.4	43	3	17	44	13	0	77	46.0
General	150	55.6	60	0	18	49	23	0	90	53.9
N	270	100.0	118	3	37	98	37	1	167	100.0
%				1.7	21.0	55.7	21.0	0.6	100.0	

*Grade Point Average for last year in school as obtained from school files.

All percentages based on known cases. Totals differ due to unknown cases.

TABLE C.6B:GPA* BY HIGHEST GRADE COMPLETED

GRADUATES

HIGHEST GRADE COMPLETED	N	%	HIGH SCHOOL GPA A	B	C	D	F	N	%
Unknown	(80)	----	0	0	1	0	1	(2)	-----
10th or less	65	6.7	1	8	19	7	3	38	4.4
11th	45	4.6	2	8	21	8	0	39	4.6
12th	866	88.7	37	297	397	37	0	768	91.0
N	976	100.0	40	313	438	52	4	844	100.0
%			4.7	37.0	51.7	6.1	0.5	100.0	

DROP-OUTS

Unknown	(51)	----	0	1	0	0	0	(1)	-----
10th or less	31	12.7	0	2	6	4	1	13	7.4
11th	23	9.4	0	1	8	8	0	17	9.7
12th	190	77.9	3	33	84	25	0	145	82.9
N	244	100.0	3	37	98	37	1	175	100.0
%			1.7	21.0	55.7	21.0	0.6	100.0	

*Grade Point Average for last year in high school as obtained from school files.

^{2} = 47.3 with 2 df, sig. at .001

^{2} was calculated only on grades of B, C, and D because of the small number of cases in the A and F categories.

All percentages based on known cases. Totals differ due to unknown cases.

TABLE C.7: SIZE OF TOWN WHERE BORN AND SIZE OF TOWN WHERE LAST ATTENDED HIGH SCHOOL BY STATE AND COMPLETION

STATE AND STATUS		SIZE OF TOWN WHERE BORN: Farm or Rural area less than 2,500	2,500 - 4,999	5,000 - 19,999	20,000 - 49,999	50,000 - 99,999	100,000 - and over	Total	SIZE OF TOWN WHERE ATTENDED LAST SCHOOL: Farm or rural area less than 2,500	2,500 - 4,999	5,000 19,999	20,000 49,999	50,000 99,999	100,000 and over	Total
GRADUATES - Total	N	518	70	128	105	75	159	1054	433	83	142	113	103	177	1051
	%	49.1	6.6	12.1	10.0	7.1	15.1	100.0	41.2	7.9	13.5	10.8	9.8	16.8	100.0
DROP-OUTS - Total	N	96	21	40	24	11	68	260	80	19	46	25	23	73	266
	%	36.9	8.1	15.4	9.2	4.2	26.2	100.0	30.1	7.1	17.3	9.4	8.6	27.5	100.0
ILLINOIS - Total	N	322	58	126	90	46	195	837	259	68	133	95	71	210	836
	%	38.5	6.9	15.1	10.7	5.5	23.3	100.0	30.9	8.1	15.9	11.4	8.5	25.2	100.0
IOWA - Total	N	292	33	41	39	40	32	477	254	34	55	43	55	40	481
	%	61.2	6.9	8.6	8.2	8.4	6.7	100.0	52.7	7.1	11.6	8.9	11.4	8.3	100.0
TOTAL ENROLLED	N	614	91	167	129	86	227	1314	513	102	188	138	126	250	1317
	%	46.8	6.9	12.7	9.8	6.5	17.3	100.0	38.9	7.7	14.3	10.5	9.6	19.0	100.0
ILLINOIS															
GRADUATES	N	252	38	90	71	38	127	616	203	52	90	74	58	139	616
	%	40.9	6.2	14.6	11.5	6.2	20.6	100.0	33.0	8.4	14.6	12.0	9.4	22.6	100.0
DROP-OUTS	N	70	20	37	19	9	68	223	56	16	43	21	13	71	220
	%	31.4	9.0	16.6	8.5	4.0	30.5	100.0	25.5	7.3	19.5	9.5	5.9	32.3	100.0
IOWA															
GRADUATES	N	265	32	35	34	36	32	434	230	31	52	39	45	38	435
	%	61.1	7.4	8.1	7.8	8.3	7.3	100.0	52.9	7.1	12.0	9.0	10.3	8.7	100.0
DROP-OUTS	N	27	1	5	5	4	0	42	24	3	3	4	10	2	46
	%	64.3	2.4	11.9	11.9	9.5	0.0	100.0	52.2	6.5	6.5	8.7	21.7	4.4	100.0

All Data based on known cases.

TABLE C.8: OCCUPATION OF PARENTS AND SPOUSE OF GRADUATES AND DROPOUTS

STATUS		HEALTH RELATED OCCUPATIONS							NON-HEALTH RELATED OCCUPATIONS								
		Professional	R. N.	L.P.N.	Skilled&Tech	Semi-Skilled	Unskilled	Sub-Total	Professional	Semi-Prof. and Tech.	Skilled	Semi-Skilled	Unskilled	Housewife	Farm	Sub-Total	Grand Total
FATHER																	
Graduates	N	4			3	4	147	158	29	132	226	153	2		231	773	931
	%	2.5			1.9	2.5	93.1	100.0	3.7	17.1	29.2	19.8	0.3		29.9	100.0	
Sub-Total	%							17.0								83.0	100.0
Drop-Outs	N	2			2	1	47	52	13	29	49	43			37	171	223
	%	3.8			3.8	2.0	90.4	100.0	7.6	17.0	28.7	25.1			21.6	100.0	
Sub-Total	%							23.3								76.7	100.0
MOTHER																	
Graduates	N	1	22	13	5	29	90	160	22	12	51	62	31	674	3	855	1015
	%	0.6	13.8	8.1	3.1	18.1	56.3	100.0	2.6	1.4	6.0	7.2	3.6	78.8	0.4	100.0	
Sub-Total	%							15.8								84.2	100.0
Drop-Outs	N	1	4		2	4	25	39	6	4	16	9	6	168		209	248
	%	2.6	10.2	7.7	5.1	10.3	64.1	100.0	2.9	1.9	7.6	4.3	2.9	80.4		100.0	
Sub Total	%							15.7								84.3	100.0
SPOUSE																	
Graduates	N	4	1		10	3	40	58	26	32	78	65		3	22	226	284
	%	6.8	1.8		17.2	5.2	69.0	100.0	11.5	14.2	34.5	28.8		1.3	9.7	100.0	
Sub-Total	%							20.4								79.6	100.0
Drop-Outs	N	1	1		1		9	12	12	8	17	14			4	55	67
	%	8.3	8.3		8.3		75.1	100.0	21.8	14.5	30.9	25.5			7.3	100.0	
Sub-Total	%							17.9								82.1	100.0

All totals based on known cases

APPENDIX D

ABILITY, INTERESTS AND ACHIEVEMENT OF ENROLLED STUDENTS

TABLE D.1 : INTER-CORRELATION MATRIX OF SELECTED VARIABLES - GRADUATES

Variable No.				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Approx. N =			1051	1051	1051	1051	1051	1051	1051	1052	1051	657	848	873	844	848	838
	TEST	$\bar{X}$	σ															
1	TST Raw Scores Science	6.5	2.5	**														
2	Arith.	18.2	4.8	.43	**													
3	Voc.	19.1	4.7	.40	.34	**												
4	Elect Total	24.9	7.2	.66	.47	.56	**											
5	Mech. Total	29.3	7.3	.45	.84	.53	.78	**										
6	Schol. Total	42.3	11.3	.55	.86	.69	.69	.81	**									
7	Total TST	67.2	14.8	.67	.77	.71	.87	.89	.92	**								
8	SVT Total	15.4	6.2	.27	.36	.09	.25	.30	.35	.34	**							
9	BET Total	81.5	11.5	.36	.47	.39	.30	.40	.55	.49	.25	**						
10	High School Rank	2.4	0.9	.24	.26	.18	.19	.22	.30	.28	.06	.26	**					
11	H.S. GPA	2.4	0.7	.18	.26	.15	.17	.23	.28	.26	.10	.24	.58	**				
12	Eng. GPA	2.4	0.7	.20	.24	.21	.15	.19	.29	.26	.08	.30	.58	.56	**			
13	Math GPA	2.1	0.8	.17	.33	.13	.18	.29	.31	.29	.10	.20	.49	.45	.44	**		
14	Science GPA	2.2	0.7	.25	.23	.20	.23	.24	.27	.29	.08	.21	.54	.52	.53	.48	**	
15	Pract. Arts GPA	2.5	0.7	.19	.29	.11	.19	.25	.29	.27	.16	.26	.47	.54	.46	.40	.42	**
16	AGE	27.1	10.5	-.08	-.07	.41	.27	.24	.06	.17	-.20	-.10	.08	.01	.07	.17	.15	-.01
17	Otis I.Q.	105.3	9.8	.37	.51	.31	.29	.39	.57	.50	.41	.53	.25	.20	.25	.16	.16	.21
18	GATB Spatial	99.2	16.6	.33	.35	.14	.41	.41	.33	.40	.57	.29	.08	.18	.04	.08	-.03	.08
19	Verbal	106.1	12.2	.42	.46	.65	.30	.52	.62	.63	.18	.53	.26	.24	.31	.15	.21	.18
20	Numerical	101.1	13.4	.35	.67	.28	.36	.50	.59	.55	.31	.55	.23	.27	.17	.19	.17	.30
21	Gen. Intel.	103.2	12.6	.49	.68	.45	.53	.65	.69	.68	.47	.58	.26	.30	.26	.21	.19	.20
22	Motor Coord.	110.1	15.7	.01	.07	.04	-.03	.02	.08	.04	-.12	.12	.21	.21	.23	.09	.09	.17
23	Mechanical	113.2	14.7	.13	.33	.20	.23	.30	.30	.30	.11	.30	.13	.20	.22	.06	.05	.22
24	PACE Raw Scores Composite	113.1	14.7	.47	.49	.68	.55	.58	.67	.69	.32	.52	.35	.28	.33	.25	.31	.21
25	Scien. & Health	37.9	7.1	.44	.35	.60	.55	.52	.52	.60	.25	.36	.27	.21	.25	.22	.28	.16
26	Gen. Inf.	41.0	6.5	.41	.33	.62	.47	.44	.53	.56	.24	.42	.25	.24	.23	.17	.23	.14
27	Arith.	21.9	4.8	.37	.67	.34	.44	.63	.65	.62	.39	.45	.29	.25	.28	.32	.27	.24
28	Gen. Info.Total	100.7	15.8	.48	.50	.63	.59	.61	.65	.70	.34	.47	.31	.27	.29	.27	.30	.20
29	Vocab.	37.4	7.3	.38	.32	.67	.44	.41	.53	.54	.20	.47	.26	.16	.29	.13	.23	.15
30	Read.	31.2	6.4	.33	.31	.55	.36	.36	.49	.48	.22	.43	.29	.25	.30	.16	.24	.17
31	Vocab. Total	68.6	12.7	.39	.34	.66	.43	.42	.55	.56	.23	.48	.30	.22	.33	.16	.25	.17
32	Ave.Classroom Rating (RN)	2.1	.4	.19	.23	.21	.21	.22	.29	.29	.14	.23	.24	.19	.21	.14	.20	.16
33	Ave.Clinical & Pt Relation (RN)	2.1	.3	.16	.13	.15	.13	.10	.17	.17	.08	.18	.21	.10	.08	.11	.13	.11

NOTE: When N=1000, Pearson r of .08 issig at .01 level.

TABLE D.1 (continued 1): INTER-CORRELATION MATRIX OF SELECTED VARIABLES - GRADUATES

Variable No.				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
34	Grades - Basic Nursing	2.5	1.4	.16	.15	.20	.15	.15	.19	.19	.14	.19	.18	.16	.13	.09	.18	.14
35	Med - Surg.	2.7	1.2	.12	.11	.19	.13	.13	.16	.17	.11	.20	.19	.13	.14	.11	.16	.13
36	Geriatrics	2.3	2.1	.03	.02	.06	.03	.02	.03	.03	-.02	.08	.13	.09	.09	.06	.07	.08
37	Pediatrics	2.7	1.2	.12	.13	.16	.12	.13	.17	.17	.16	.18	.15	.11	.12	.10	.13	.12
38	Obstetrics	2.8	1.2	.13	.11	.19	.13	.12	.17	.17	.10	.20	.16	.13	.15	.12	.15	.16
39	Achievement Classroom	4.5	3.0	.13	.17	.21	.20	.20	.22	.24	.08	.17	.24	.15	.16	.14	.19	.12
40	Patient Rela.	4.4	3.3	.01	.03	.09	.07	.06	.05	.07	.02	.04	.01	-.04	.00	-.01	.00	.00
41	Clinical	5.5	2.7	.03	.09	.15	.11	.13	.14	.14	.04	.10	.12	.06	.07	.07	.13	.10
42	Crites	40.6	3.6	.05	.03	.09	.02	.02	.07	.05	.06	.08	.08	.06	.06	.03	.03	.01
43	Minnesota Hosp. Attend.	55.7	4.3	-.01	-.06	-.02	.00	-.02	-.05	-.03	-.01	-.04	-.07	-.05	-.05	-.06	-.10	-.07
44	Health Service	76.9	6.5	.01	-.07	-.03	.02	-.02	-.05	-.02	-.01	-.07	-.06	-.05	-.07	-.10	-.11	-.09
45	Office work	59.6	10.4	-.06	.08	-.02	-.06	.03	.04	.00	-.05	.05	.02	.01	.02	.08	.00	.06
46	Food Service	66.0	9.7	-.02	.03	-.02	-.05	-.01	.02	-.01	.02	.00	.06	.06	.07	.00	.06	.05
47	Sales Office	67.2	9.4	.02	-.07	.09	.00	-.05	-.01	.00	-.07	-.02	.05	-.03	.03	.00	-.03	-.05
48	TUC Body Structure	29.4	8.3	.17	.10	.16	.21	.16	.16	.20	.19	.08	.18	.11	.09	.10	.18	.06
49	Basic Nursing	32.3	8.9	.19	.17	.25	.24	.23	.23	.26	.21	.17	.09	.05	.03	.07	.10	.03
50	Nutrition	25.8	7.7	.20	.18	.28	.25	.25	.25	.28	.14	.11	.15	.11	.11	.13	.16	.05
51	Total	88.3	19.7	.20	.15	.26	.26	.24	.23	.27	.21	.11	.18	.11	.10	.13	.18	.06
52	NIP Med-Surg	47.8	8.0	.16	.13	.21	.21	.19	.18	.21	.12	.12	.16	.12	.17	.11	.11	.09
53	Mat. child	28.2	5.9	.16	.15	.18	.1[illegible]	.20	.19	.22	.12	.11	.11	.0[illegible]	.10	.11	.12	.05
54	Pharm.	19.7	4.8	.15	.15	.18	.15	.17	.20	.20	.14	.0[illegible]	.20	.08	.10	.08	.18	.10
55	Total	97.1	15.5	.19	.17	.24	.23	.23	.23	.26	.16	.15	.20	.12	.16	.12	.16	.10
56	State Boards	530.3	85.2	.16	.17	.26	.21	.22	.23	.25	.09	.11	.18	.15	.16	.14	.15	.10
57	Job Satis. - Likes Job	5.9	.[illegible]	-.01	-.03	.00	.00	-.02	-.02	-.01	-.01	.00	-.06	-.02	.00	-.06	-.04	-.05
58	Time	5.8	.8	.03	-.07	.03	.08	.01	-.03	.02	.01	-.03	-.03	.03	.01	-.06	.00	-.03
59	Comparison	4.9	.[illegible]	.02	-.07	.02	.03	-.02	-.03	.00	-.05	-.04	.01	-.02	.01	-.03	-.05	-.01
60	Job Change Factors	5.4	1.9	.00	-.02	.00	.04	.01	-.04	.00	.00	.04	.02	-.02	-.02	-.01	-.01	.06
61	JSB Raw Score	21.9	2.8	-.01	-.08	.00	.02	-.03	-.06	-.03	-.01	-.01	-.01	-.03	-.01	-.07	-.05	-.06

TABLE D.1 (continued 2): INTER-CORRELATION MATRIX OF SELECTED VARIABLES - GRADUATES

Var. No.:	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
34	.06	.21	.10	.25	.07	.30	.07	.10	.31	.25	.26	.22	.29	.30	.26	.30	.13	.05	**		
35	.06	.16	.20	.35	.21	.38	.14	.22	.31	.25	.26	.21	.29	.29	.27	.30	.11	.08	.73	**	
36	.05	.07	.06	.03	.07	.02	.13	.05	.15	.13	.12	.07	.13	.13	.14	.15	.00	.00	.29	.42	**
37	.02	.17	.22	.34	.26	.38	.10	.18	.28	.23	.24	.21	.27	.25	.24	.26	.07	.11	.66	.82	.38
38	.04	.17	.13	.37	.32	.32	.12	.27	.27	.21	.24	.17	.25	.26	.24	.27	.11	.10	.63	.79	.40
39	.07	.14	.07	.22	.00	.18	.14	.12	.27	.22	.20	.17	.24	.26	.25	.28	.27	.20	.14	.17	.06
40	.05	-.02	-.02	.06	.01	.02	.01	.02	.05	.03	.02	.04	.04	.06	.03	.05	.06	.03	.16	.19	.09
41	.07	.04	.05	.10	.00	.13	.07	.04	.14	.11	.10	.10	.12	.13	.13	.14	.16	.14	.13	.14	.07
42	.02	.11	.00	.00	.09	.06	-.02	.11	.14	.09	.11	.07	.10	.15	.17	.18	.04	.04	.13	.12	.02
43	-.05	-.04	.04	-.07	-.18	-.03	-.01	-.12	-.04	.01	-.03	-.04	-.02	-.04	-.06	-.06	-.02	.03	-.06	-.03	-.06
44	.05	-.02	.02	-.04	-.19	-.02	.03	-.11	-.02	.03	-.01	-.03	.00	-.03	-.04	-.04	-.03	.02	-.03	-.01	-.03
45	.03	.00	-.04	.07	.02	.03	.04	-.04	-.02	-.06	-.03	.03	-.03	-.01	-.02	-.01	.01	-.02	-.04	-.06	.01
46	-.06	.01	.04	.01	.03	.02	.04	.03	-.01	-.02	-.02	.03	.00	-.03	.00	-.02	-.04	.00	.01	.00	-.02
47	.04	.01	-.10	.01	-.16	-.08	.05	.01	.07	.07	.10	-.02	.07	.08	.07	.07	.09	.09	.04	.06	-.03
48	.07	.15	.15	.02	.04	.10	-.07	.02	.24	.24	.18	.17	.23	.20	.20	.22	.17	.05	.15	.13	.13
49	.08	.10	.27	.21	.40	.29	-.05	.12	.31	.30	.25	.21	.30	.24	.24	.26	.16	.08	.13	.13	.01
50	.17	.14	.07	.10	.05	.11	.00	.07	.35	.33	.28	.23	.34	.29	.30	.32	.15	.03	.20	.15	.05
51	.14	.15	.15	.09	.09	.14	-.04	.05	.35	.34	.28	.23	.34	.30	.29	.32	.19	.06	.20	.17	.09
52	.07	.11	.05	.10	.11	.11	.03	.11	.27	.21	.22	.16	.24	.25	.25	.27	.15	.01	.20	.16	.00
53	.04	.12	.05	.06	.00	.08	-.01	.06	.24	.18	.18	.19	.22	.21	.20	.22	.11	.06	.19	.14	.00
54	.00	.14	.03	.11	.01	-.17	-.02	.10	.21	.18	.16	.15	.20	.18	.19	.20	.14	.07	.16	.11	.01
55	.05	.15	.08	.12	.09	.15	.01	.11	.30	.24	.24	.21	.28	.27	.27	.29	.17	.05	.23	.18	.00
56	.10	.14	.00	.13	.03	.10	.04	.05	.32	.26	.26	.20	.29	.28	.31	.32	.19	.07	.24	.18	.03
57	.01	.00	-.05	-.05	-.04	.00	.00	-.09	.01	.01	-.01	-.01	-.01	.03	.02	.03	-.08	-.10	-.02	.00	.07
58	.09	.00	.13	-.02	.08	.04	-.02	.08	.02	.03	.03	-.02	.02	.04	.01	.03	.00	-.06	-.05	-.06	.04
59	.04	.02	.03	.06	.02	.02	.01	-.01	.00	.01	.03	-.03	.00	.03	-.02	.00	-.05	-.05	-.05	-.06	.00
60	-.06	.01	.02	.02	-.02	.01	.00	-.05	.02	.01	.01	.01	.01	.03	.03	.03	-.06	-.07	.03	.03	.07
61	.06	.01	.05	.00	.01	.02	.00	-.04	.01	.01	.01	-.02	.00	.04	.01	.03	-.06	-.04	-.02	-.03	.07
												RN POTENTIAL							➤ .25	.30	.19

TABLE D.1 (continued 3): INTER-CORRELATION MATRIX OF SELECTED VARIABLES - GRADUATES

Var. No.:	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
N=	1056	1031	204	390	149	390	386	389	1026	1026	1026	1026	1026	1026	1026	1026	1025	436	1051	1051	1050
16	**																				
17	-.23	**																			
18	-.14	.30	**																		
19	.17	.51	.28	**																	
20	-.07	.38	.29	.45	**																
21	.00	.59	.69	.73	.76	**															
22	-.06	.08	-.15	.13	.11	.03	**														
23	.00	.27	.18	.39	.48	.41	.20	**													
24	.29	.53	.31	.68	.41	.62	-.03	.24	**												
25	.38	.36	.25	.57	.24	.50	-.08	.15	.86	**											
26	.25	.42	.34	.57	.33	.50	-.05	.15	.82	.66	**										
27	.12	.51	.37	.45	.64	.65	-.04	.25	.70	.54	.47	**									
28	.31	.50	.37	.64	.46	.64	-.07	.23	.95	.89	.86	.75	**								
29	.28	.43	.20	.63	.21	.48	.03	.21	.85	.66	.67	.44	.72	**							
30	.15	.44	.17	.59	.25	.43	.01	.19	.83	.63	.61	.43	.67	.70	**						
31	.24	.47	.19	.66	.25	.49	.02	.21	.91	.70	.69	.47	.75	.93	.91	**					
32	.03	.29	.04	.35	.26	.34	.08	.22	.30	.24	.21	.21	.26	.27	.27	.30	**				
33	-.06	.24	.21	.24	.09	.21	.19	.26	.18	.15	.16	.10	.18	.16	.15	.17	.45	**			

TABLE D.1 (continued 4): INTER-CORRELATION MATRIX OF SELECTED VARIABLES - GRADUATES

Var. No.	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61
N=	1052	1040	918	18	918	1027	1028	1028	1028	1028	1028	1033	1033	1033	1033	991	989	986	961	1049	905	901	900	899	905
37	**																								
38	.80	**																							
39	.16	.19	**																						
40	.20	.20	.40	**																					
41	.12	.13	.53	.65	**																				
42	.12	.10	.13	.03	.07	**																			
43	.00	-.02	.02	-.02	-.01	.03	**																		
44	.00	-.01	.01	-.03	-.03	.06	.85	**																	
45	-.06	-.05	.01	.07	.03	-.04	-.21	-.25	**																
46	.01	-.02	-.02	-.04	.01	.02	.05	.07	-.25	**															
47	.02	.02	.07	.02	.06	.14	.15	.22	-.14	-.02	**														
48	.14	.15	.31	.13	.16	.11	-.07	.07	-.04	-.07	.06	**													
49	.15	.10	.24	.13	.16	.19	.09	.06	-.04	-.02	.08	.47	**												
50	.16	.14	.30	.12	.19	.23	.10	.09	-.01	-.03	.16	.54	.52	**											
51	.18	.15	.35	.16	.21	.21	.10	.10	-.04	-.07	.13	.83	.74	.84	**										
52	.21	.19	.31	.14	.21	.27	.08	.07	-.01	-.07	.20	.41	.43	.55	.57	**									
53	.18	.18	.26	.13	.22	.29	.05	.06	-.02	-.06	.16	.35	.36	.50	.51	.61	**								
54	.12	.13	.24	.14	.19	.18	.10	.07	-.02	.01	.05	.40	.46	.45	.54	.48	.42	**							
55	.22	.20	.34	.16	.25	.29	.01	.07	-.01	-.05	.18	.47	.50	.61	.65	.90	.80	.73	**						
56	.20	.19	.37	.16	.25	.32	.10	.09	-.05	-.06	.18	.47	.48	.64	.66	.69	.62	.49	.74	**					
57	.02	.02	-.05	.04	.01	.03	.11	.08	.00	.02	.03	-.06	-.03	-.05	-.06	-.02	-.03	-.02	-.03	-.06	**				
58	-.04	-.03	.00	.02	.02	.00	.09	.07	.04	-.07	.03	.08	.03	.01	.05	.03	.02	.01	.02	.00	.46	**			
59	-.04	-.02	-.03	.01	-.02	.03	.09	.08	-.03	.02	.05	-.02	-.02	.02	-.02	.00	.03	-.04	.00	-.01	.41	.37	**		
60	.04	.03	.02	.05	.02	.03	.09	.07	.02	-.02	.00	.01	-.02	-.06	-.02	-.03	-.04	-.02	-.03	-.06	.50	.41	.32	**	
61	.00	.00	-.01	.05	.01	.03	.11	.09	.00	-.02	.05	.00	.00	-.06	-.02	-.01	-.01	-.01	-.01	-.05	.75	.69	.67	.74	**
	.25	.28	.40	.11	.24					RN POTENTIAL										.23					

TABLE D.2: INTER-CORRELATION MATRIX OF SELECTED VARIABLES – DROPOUTS

	Variable Number			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	Approximate N =			264	265	265	265	265	265	265	265	265	258	52	112	41	112	112	112
		$\bar{X}$	σ																
1.	TST-Sci.	5.5	2.4	**															
2.	Arith.	15.5	5.7	.53	**														
3.	Vocab.	17.2	5.3	.55	.49	**													
4.	Elec. T.	22.3	6.5	.67	.56	.51	**												
5.	Mech. T.	25.8	8.1	.55	.90	.57	.79	**											
6.	Schol. T.	36.4	10.6	.64	.89	.80	.66	.87	**										
7.	TST-TOT.	58.7	15.6	.71	.83	.78	.86	.92	.95	**									
8.	SVT-TOT	12.7	6.3	.36	.40	.19	.39	.42	.40	.43	**								
9.	BET-TOT.	75.7	13.3	.48	.56	.51	.38	.49	.62	.58	.36	**							
10.	Otis	100.0	10.9	.47	.56	.47	.38	.50	.62	.58	.50	.61	**						
11.	GATB Spatial	96.0	20.8	.42	.26	.23	.47	.33	.30	.39	.62	.23	.45	**					
12.	Verbal	102.5	13.2	.56	.51	.69	.46	.47	.63	.62	.29	.63	.61	.30	**				
13.	Num	96.0	15.6	.41	.43	.38	.48	.51	.50	.53	.29	.41	.29	.22	.38	**			
14.	Gen. Int.	99.0	15.8	.54	.68	.63	.59	.68	.73	.74	.61	.62	.70	.71	.64	.69	**		
15.	Mot. Coor.	110.2	17.2	-.07	-.11	.19	-.14	-.11	.04	-.03	-.13	.11	.15	-.23	.13	.23	-.01	**	
16.	Mech.	114.1	18.1	.19	.13	.32	.16	.16	.24	.23	.20	.36	.27	.22	.32	.55	.26	.20	**
17.	GPA (est).	2.6	0.7	.17	.19	.18	.17	.23	.23	.22	.06	.12	.13	.07	.06	.19	.11	.11	.07
18.	H.S. Rnk (est)	2.5	0.8	.31	.35	.25	.26	.35	.37	.35	.11	.21	.21	-.02	.19	-.18	.24	.06	.07
19.	H.S. Rnk (files)	3.0	0.9	.31	.33	.27	.35	.41	.37	.41	.18	.33	.25	.18	.14	.10	.22	-.01	.25
20.	GPA files	3.0	0.7	.30	.32	.14	.26	.34	.30	.31	.15	.31	.25	.35	.05	.25	.25	-.19	.09
21.	Crites	38.8	3.6	.27	.24	.29	.17	.22	.30	.28	-.01	.29	.22	-.02	.09	-.12	.18	.26	.03
22.	MVII Hosp. Attend.	54.6	5.4	.22	.21	.13	.30	.28	.20	.26	.08	.21	.14	.28	.15	.10	.27	.13	-.23
23.	Health Serv.	75.5	8.5	.11	.22	.11	.26	.28	.20	.24	.10	.14	.17	.34	.14	.13	.29	.08	-.19
24.	Office Work	60.9	10.9	-.01	.02	-.02	-.08	-.03	.00	-.04	-.05	.01	-.18	.00	-.12	.28	-.02	-.10	.29
25.	Food.Serv.	63.8	10.7	.02	.16	.12	.02	.14	.17	.13	-.02	.24	.14	.23	.29	.38	.23	.27	.17
26.	Sales Office	67.6	10.6	.19	.06	.21	.11	.11	.14	.15	.09	.17	.21	.35	.22	.33	.45	.27	.29
27.	Pace-Comp.	104.4	17.5	.56	.66	.70	.57	.67	.76	.75	.44	.65	.62	.51	.66	.45	.75	.02	.21
28.	Pace-Sci & Health	34.6	7.2	.50	.51	.62	.56	.58	.61	.64	.35	.49	.43	.47	.51	.33	.64	-.07	.13
29.	Gen. Inf.	37.5	8.4	.48	.53	.63	.49	.55	.63	.63	.36	.53	.52	.53	.61	.39	.65	.07	.19
30.	Arith.	19.2	5.9	.46	.73	.43	.51	.71	.70	.68	.52	.55	.59	.43	.46	.62	.70	-.06	.15
31.	Gen. Inf. Total	91.4	18.8	.55	.65	.65	.59	.68	.73	.74	.45	.60	.58	.55	.60	.50	.73	-.01	.18
32.	Vocab.	34.4	8.2	.48	.52	.72	.45	.52	.68	.65	.33	.61	.52	.29	.70	.23	.64	.06	.25
33.	Reading	28.0	7.0	.50	.55	.59	.44	.53	.65	.62	.34	.58	.56	.41	.61	.32	.64	.00	.22
34.	V & R Total	62.5	14.2	.53	.57	.71	.48	.56	.72	.68	.36	.64	.58	.37	.70	.29	.68	.08	.25

TABLE D.2 (continued) INTER-CORRELATION MATRIX OF SELECTED VARIABLES - DROPOUTS

Variable Number		17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Approximate N =		262	260	125	163	129	130	130	130	130	130	251	251	251	251	251	251	251	251
1.																			
2.																			
3.																			
4.																			
5.																			
6.																			
7.																			
8.																			
9.																			
10.																			
11.																			
12.																			
13.																			
14.																			
15.																			
16.																			
17.		**																	
18.		.66	**																
19.		.41	.57	**															
20.		.56	.59	.67	**														
21.		.02	.13	.10	.14	**													
22.		.04	.06	.04	.04	.05	**												
23.		.08	.05	.05	.07	.10	.93	**											
24.		-.05	-.02	-.03	.12	.03	-.20	-.21	**										
25.		.03	.12	.11	.13	.02	.04	.02	-.20	**									
26.		.21	.13	-.07	-.09	.11	.18	.26	-.15	.00	**								
27.		.21	.29	.42	.40	.35	.21	.23	-.20	.25	.20	**							
28.		.15	.24	.36	.36	.33	.24	.25	-.25	.13	.15	.86	**						
29.		.21	.23	.35	.32	.19	.22	.26	-.19	.25	.22	.87	.73	**					
30.		.13	.23	.39	.37	.23	.18	.21	-.10	.18	.09	.80	.61	.63	**				
31.		.19	.26	.42	.40	.31	.22	.25	-.20	.22	.18	.97	.90	.90	.82	**			
32.		.19	.27	.30	.25	.32	.15	.13	-.13	.20	.19	.87	.70	.70	.58	.77	**		
33.		.23	.28	.33	.35	.36	.18	.19	-.20	.27	.24	.87	.65	.69	.60	.75	.76	**	
34.		.22	.29	.35	.33	.37	.18	.17	-.18	.25	.23	.93	.73	.74	.63	.81	.95	.93	**

TABLE D.3 : FACULTY EVALUATION OF RN POTENTIAL BY STUDENTS' PREFERENCE FOR PN AND RN CHOICE AND STATE BOARD SCORES

	STUDENTS EVALUATED BY FACULTY AS HAVING POTENTIAL FOR RN PROGRAM									
	State Board Scores									
STUDENT PREFERENCE	349 or below	350-399	400-449	450-499	500-549	550-599	600-649	650 or above	Total	%
Have previously applied to RN	0	3	1	6	6	10	8	8	42	17.5
Plan to enter RN after PN	3	3	2	3	7	6	5	3	32	13.3
PN program takes shorter time	0	1	1	2	3	7	4	4	22	9.1
Prefer PN kind of duties	0	0	4	5	5	8	5	7	34	14.2
PN more appropriate to prior education and abilities	1	3	4	4	4	12	6	8	42	17.5
Not as expensive as RN	0	0	0	1	4	2	0	2	9	3.8
Undecided	0	2	2	3	7	7	8	6	35	14.6
Other	0	0	0	0	1	3	1	0	5	2.1
No response	0	0	0	3	6	3	4	3	19	7.9
TOTAL	4	12	14	27	43	58	41	41	240	
%	1.7	5.0	5.8	11.2	17.9	24.2	17.1	17.1		100.0

	STUDENTS EVALUATED BY FACULTY AS NOT HAVING POTENTIAL FOR RN PROGRAM									
	State Board Scores									
STUDENT PREFERENCE	349 or below	350-399	400 449	450-499	500-549	550 599	600-649	650 or above	Total	%
Have previously applied to RN	4	3	15	20	30	24	11	6	113	14.5
Plan to enter RN after PN	3	8	12	18	32	27	11	6	117	15.0
PN program takes shorter time	3	0	10	9	12	15	11	7	67	8.6
Prefer PN kind of duties	2	6	13	26	41	31	8	7	134	17.2
PN more appropriate to prior education and abilities	2	6	15	19	31	29	16	5	123	15.7
Not as expensive as RN	2	1	0	5	10	4	1	2	25	3.2
Undecided	2	3	9	25	27	27	23	3	119	15.2
Other	0	1	0	2	2	1	5	0	11	1.4
No response	0	5	7	15	19	14	11	1	72	9.2
TOTAL	18	33	81	139	204	172	97	37	781	
%	2.3	4.2	10.4	17.9	26.1	22.0	12.4	4.7		100.0

TABLE D.4: PREVIOUS HEALTH OCCUPATIONS EXPERIENCE AND PN PROGRAM ACHIEVEMENT

Previous Health Occupation	Classroom Achievement - Decile Ranking*												Patient Relationships - Decile Rankings*											
	1	2	3	4	5	6	7	8	9	10	T.T.	Mean	1	2	3	4	5	6	7	8	9	10	T.T.	Mean
Aide or unlicensed P.N.	32	49	52	42	49	49	51	41	46	33	444	5.5	30	34	58	47	53	55	51	45	37	33	443	5.5
Incidental Pt. Care	4	6	3	3	9	7	7	5	1	2	47	5.1	5	2	7	3	7	5	9	6	2	1	47	5.2
Home Health Care	7	4	7	7	3	1	4	7	7	6	53	5.5	6	3	5	3	3	8	6	4	5	10	53	6.0
Candy Striper	0	2	1	4	5	4	6	5	0	4	31	6.3	1	2	3	5	2	2	4	5	5	2	31	6.1
Adult Health Volunteer	4	3	3	2	4	3	3	0	2	2	26	4.8	3	2	0	3	7	0	4	3	1	3	26	5.6
Student Nursing Club	0	0	1	3	2	5	1	3	4	3	23	5.5	1	1	2	4	2	2	2	1	3	4	22	6.2
Red Cross-First Aid	4	3	1	1	5	1	4	3	3	3	28	5.6	1	4	5	2	2	6	1	3	3	1	28	5.2
Other	9	8	10	7	6	8	1	12	6	1	68	4.8	14	13	2	7	4	4	6	5	10	3	68	4.7
None	22	15	15	24	21	24	20	19	17	16	193	5.4	17	16	17	24	21	21	24	16	23	15	194	5.6
TOTAL	82	90	93	69	104	102	97	95	86	70	913	5.4	48	44	99	98	101	103	107	88	89	72	912	5.6

Previous Health Occupation	Clinical Performance - Decile Ranking*												State Board Scores									
	1	2	3	4	5	6	7	8	9	10	T.T.	Mean	650-above	649-600	599-550	549-550	499-450	449-400	399-350	349-below	T.T	Mean #
Aide or unlicensed P.N.	35	39	45	44	49	58	54	42	42	36	444	5.6	39	69	113	124	87	48	16	15	511	5.2
Incidental Pt. Care	3	5	3	6	8	4	6	7	4	1	47	5.4	3	5	13	14	10	3	1	3	52	5.0
Home Health Care	5	5	5	4	5	7	5	6	4	7	53	5.9	3	8	11	15	9	4	4	0	54	5.1
Candy Striper	0	3	3	2	6	4	4	3	4	2	31	6.0	1	4	7	5	10	8	2	0	37	4.6
Adult Health Volunteer	5	2	3	4	0	3	2	2	4	1	26	4.9	2	5	9	6	3	5	0	0	30	5.4
Student Nursing Club	0	0	3	4	3	1	0	5	3	3	22	6.5	0	0	5	6	6	4	1	0	22	4.5
Red Cross-First Aid	4	3	2	2	5	2	2	3	3	2	28	5.2	4	2	9	6	2	4	2	0	29	5.3
Other	8	10	6	8	7	6	8	6	5	4	68	5.0	6	13	17	19	10	3	6	0	74	5.4
None	12	19	21	23	24	19	18	21	20	17	194	5.6	21	31	49	58	34	23	13	5	234	5.1
TOTAL	72	86	91	97	107	104	99	95	89	73	913	5.6	79	137	233	253	171	102	45	23	1043	5.1
													# 8	7	6	5	4	3	2	1		

*Decile 1 = highest ranking; scale was reversed for correlations in Table D.1

TABLE D.5: PN FACULTY FINAL RANKINGS AND PRIOR EMPLOYMENT

TYPE AND LENGTH OF PRIOR EMPLOYMENT	Classroom Achievement - Decile Ranking*												Patient Relationships - Decile Ranking*											
	1	2	3	4	5	6	7	8	9	10	Tot	Mean	1	2	3	4	5	6	7	8	9	10	Tot	Mean
Skilled Health																								
No. of mo.: 1 - 3	2	4	7	4	8	6	8	11	2	5	57	5.9	4	5	4	7	5	10	6	4	4	8	57	5.8
4 - 6	4	9	10	6	5	9	5	2	3	3	56	6.5	3	4	5	3	8	8	8	7	6	4	56	5.9
7 - 12	5	8	10	13	7	15	7	11	14	9	99	7.3	10	3	13	11	10	12	11	16	11	7	98	5.6
13 - 24	10	20	8	13	14	7	13	10	12	12	119	5.4	9	12	18	16	13	12	8	13	11	7	119	5.2
25 or more	11	9	16	7	14	9	12	6	8	5	97	5.0	10	14	14	8	12	11	13	3	7	5	97	4.8
Total	32	50	51	43	48	46	45	40	39	34	438	6.0	36	38	54	45	48	53	46	37	39	31	427	5.5
Skilled Non-Health																								
No. of mo.: 1 - 3	1	0	1	0	2	1	3	0	1	0	9	5.6	1	2	1	2	1	0	2	0	0	0	9	3.9
4 - 6	2	3	1	0	1	1	0	2	0	0	10	3.8	2	1	2	1	1	1	0	1	1	0	10	4.2
7 - 12	1	2	2	0	5	2	0	0	0	0	12	4.0	2	2	0	2	3	1	1	0	1	0	12	4.3
13 - 24	3	1	2	2	0	1	3	0	0	0	12	3.8	0	0	5	1	0	1	1	2	1	1	12	5.6
25 or more	2	2	0	1	3	2	0	0	4	1	15	5.5	2	3	0	1	1	3	2	0	2	1	15	5.1
Total	9	8	6	3	11	7	6	2	5	1	58	4.5	7	8	8	7	6	6	6	3	5	2	58	4.6
Semi-Skilled Non-Health																								
No. of mo.: 1 - 3	4	2	2	2	3	2	5	3	3	3	29	5.7	2	1	1	0	7	3	5	4	4	2	29	6.3
4 - 6	0	3	2	4	1	3	0	2	1	0	16	4.8	1	3	4	1	0	1	3	1	1	1	16	4.8
7 - 12	3	1	5	1	1	1	2	4	2	0	20	5.0	3	0	1	3	2	2	3	3	2	1	20	5.7
13 - 24	3	3	1	2	2	1	3	3	1	0	19	4.7	3	3	2	2	1	3	2	0	2	1	19	4.6
25 or more	5	3	2	4	4	3	0	5	2	0	28	4.6	7	2	3	1	5	1	3	3	2	1	28	4.6
Total	15	12	12	13	11	10	10	17	9	3	112	4.9	16	9	11	7	15	10	16	11	11	6	112	5.2
Unskilled Non-Health																								
No. of mo.: 1 - 3	4	5	8	6	12	9	8	10	11	7	80	6.0	3	6	7	9	6	11	11	10	7	10	80	6.1
4 - 6	2	5	2	3	1	3	4	1	4	4	29	5.7	2	3	0	5	4	2	1	5	4	3	29	6.0
7 - 12	2	2	3	4	3	7	6	5	1	1	34	5.6	0	6	1	5	2	7	4	4	2	3	34	5.6
13 - 24	2	0	1	4	1	2	2	3	1	4	20	6.3	1	0	2	0	3	1	5	5	1	3	21	6.8
25 or more	5	3	0	3	1	4	1	1	1	4	23	5.0	1	1	4	3	4	0	6	0	2	2	23	5.5
Total	15	15	14	20	18	25	21	20	18	20	186	5.7	7	16	14	22	19	21	27	24	16	21	187	6.0
Unknown and other	11	5	11	14	16	14	14	15	11	13	124	5.8	13	5	12	15	14	11	12	13	18	11	124	5.8

*Decile 1 = highest ranking; scale was reversed for correlations in Table D.1

TABLE D.5 (Continued) PN FACULTY FINAL RANKINGS AND PRIOR EMPLOYMENT

TYPE AND LENGTH OF PRIOR EMPLOYMENT	Clinical Performance - Decile Ranking*												State Board Scores									
	1	2	3	4	5	6	7	8	9	10	Tot	Mean	650-above (8	649-600 7	599-550 6	549-500 5	499-450 4	449-400 3	399-350 2	349 or below 1)#	Tot	Mean#
Skilled Health																						
No. of mo.: 1 - 3	3	6	5	8	5	8	4	8	4	6	57	5.7	3	4	13	21	14	4	4	0	63	4.9
4 - 6	4	4	5	2	6	8	10	9	2	6	56	5.9	4	12	17	12	12	8	3	0	68	5.2
7 - 12	6	8	11	14	5	17	10	10	12	6	99	5.6	7	15	25	26	23	9	2	4	111	5.1
13 - 24	13	13	8	14	16	11	17	11	8	8	119	5.2	8	21	35	22	23	13	3	6	131	5.1
25 or more	11	14	12	7	13	8	12	4	9	7	97	5.0	12	14	24	34	15	9	4	3	115	5.3
Total	37	45	41	45	45	52	53	42	35	33	428	5.5	34	66	114	115	87	43	16	13	488	5.2
Skilled Non-Health																						
No. of mo.: 1 - 3	1	1	1	2	2	0	1	0	1	0	9	4.4	0	1	1	5	1	0	1	0	9	4.9
4 - 6	2	2	1	1	2	0	1	0	0	1	10	4.0	2	3	4	1	0	0	1	0	11	6.2
7 - 12	1	1	1	2	4	1	1	0	0	1	12	4.8	2	4	3	3	2	0	0	1	15	5.7
13 - 24	2	1	3	0	3	1	1	0	1	0	12	4.2	2	1	5	3	0	0	1	0	12	5.8
25 or more	2	0	2	1	1	3	3	0	2	1	15	5.6	2	2	2	5	1	4	0	0	16	5.2
Total	8	5	8	6	12	5	7	0	4	3	58	4.6	8	11	15	17	4	4	3	1	63	5.6
Semi-Skilled Non-Health																						
No. of mo.: 1 - 3	0	4	3	2	3	2	3	7	2	3	29	6.1	2	6	6	6	6	3	3	1	33	5.0
4 - 6	2	2	4	2	0	2	2	0	2	0	16	4.4	0	5	3	9	3	1	0	1	22	5.2
7 - 12	2	2	2	3	0	0	2	6	3	0	20	5.7	2	1	7	3	5	3	3	0	24	4.8
13 - 24	4	1	3	3	3	0	1	1	2	1	19	4.5	3	6	3	7	3	0	2	2	26	5.3
25 or more	3	4	3	2	6	3	1	2	3	1	28	4.9	5	2	9	5	4	5	2	1	33	5.1
Total	11	13	15	12	12	7	9	16	12	6	112	5.1	12	20	28	30	21	12	10	5	138	5.1
Unskilled Non-Health																						
No. of mo.: 1 - 3	4	8	6	5	9	15	6	8	13	6	80	5.9	5	8	25	23	16	10	2	0	89	4.9
4 - 6	2	2	2	4	3	2	3	2	6	3	29	6.1	5	3	5	9	4	2	2	1	31	5.3
7 - 12	0	3	7	4	3	3	6	6	0	2	34	5.5	0	6	10	8	6	6	2	1	39	4.8
13 - 24	1	1	1	1	1	3	3	5	1	4	21	6.8	1	1	4	8	5	6	0	0	25	4.7
25 or more	1	3	3	2	3	4	1	1	3	2	23	5.4	3	5	7	3	4	3	1	0	26	5.5
Total	8	17	19	16	19	27	19	22	23	17	187	5.9	14	23	51	51	35	27	7	2	210	5.1
Unknown and other	9	6	8	18	19	10	10	15	15	14	124	5.9	11	16	24	39	25	16	8	2	141	5.0

*Decile 1 = highest ranking; scale was reversed for correlations in Table D.1

#Mean of eight score - categories

APPENDIX E

COSTS AND SATISFACTIONS OF ENROLLED STUDENTS

TABLE E.1: SOURCE OF FUNDS WHILE ATTENDING PN SCHOOL BY AGE GROUPS AND MARITAL STATUS

Age	Marital Status and Source of Funds by Percentages															Subtotals Source by Age Group				
	Single (59.4% of Students)					Married (29.5% of Students)					Div., Wid., Sep. (11% of Students)									
	N	Per.	Pub.	Earn.	Unk.	N	Per.	Pub.	Earn.	Unk.	N	Per.	Pub.	Earn.	Unk.	Per.	Pub.	Earn.	Unk.	% of Age Group
17-19	360	72.5%	17.0%	0.0%	10.5%	7	71.5%	14.0%	0.0%	14.5%	1	0.0%	100.0%	0.0%	0.0%	48.0%	43.0%	9.0%	9.0%	27.6%
20-24	381	61.5%	21.2%	15.5%	1.8%	53	84.9%	15.1%	0.0%	0.0%	22	13.6%	86.4%	0.0%	0.0%	53.0%	41.0%	5.0%	1.0%	34.2%
25-29	30	23.4%	43.4%	33.3%	0.0%	46	93.5%	6.5%	0.0%	0.0%	29	6.8%	86.2%	6.9%	0.0%	41.0%	45.0%	13.0%	1.0%	7.9%
30-34	5	20.0%	60.0%	20.0%	0.0%	45	88.9%	8.9%	2.2%	0.0%	18	5.5%	94.5%	0.0%	0.0%	38.0%	54.0%	7.0%	1.0%	5.1%
35-39	8	25.0%	62.5%	12.5%	0.0%	67	86.5%	9.0%	3.0%	1.5%	23	13.0%	86.6%	4.3%	0.0%	42.0%	51.0%	7.0%	0.0%	7.4%
40-44	3	33.0%	33.0%	33.0%	0.0%	69	89.8%	8.6%	1.4%	0.0%	17	11.6%	88.4%	0.0%	0.0%	45.0%	43.0%	12.0%	0.0%	6.7%
45-49	2	0.0%	0.0%	0.0%	100.0%	57	86.0%	7.0%	5.0%	2.0%	20	25.0%	60.0%	10.0%	5.0%	37.0%	22.0%	5.0%	36.0%	5.9%
50-54	0	0.0%	0.0%	0.0%	100.0%	33	87.9%	3.0%	6.0%	3.1%	14	35.0%	65.0%	0.0%	0.0%	41.0%	23.0%	2.0%	34.0%	3.5%
55-+	2	0.0%	0.0%	0.0%	100.0%	16	62.6%	12.5%	25.0%	0.0%	4	25.0%	50.0%	25.0%	0.0%	29.0%	21.0%	17.0%	33.0%	1.7%
TOTAL	791	32.2%	35.5%	19.0%	6.3%	393	83.5%	9.4%	4.4%	3.7%	148	16.9%	76.6%	5.8%	.7%	-	-	-	-	100.0%

TABLE E.2: STUDENTS' EXPRESSED SATISFACTIONS BY PRIOR HEALTH EXPERIENCE, AGE GROUPS, AND SCHOOL COMPLETION

PRIOR HEALTH EXPERIENCE	HOW HARD DO YOU HAVE TO WORK					STUDENT'S OPINION OF INSTRUCTORS' KNOWLEDGE				DEGREE INSTRUCTORS KNOW STUDENT				
	No response	Not hard	Busy but not hard	Hard 1/2 the time	Hard almost all the time	No response	Always know	Usually know	Usually don't know	No response	All well	Most well	Most don't	1/2 well 1/2 don't
Unknown	17			7	8	17	4	11		18	1	7	2	4
Nurse aide or unlicensed PN	87	13	93	188	258	83	221	334	1	86	120	239	128	66
Health related incidental patient contact	16	1	16	11	29	18	25	30		17	7	27	17	5
Health related no paitent contact	7	2	13	19	25	7	25	34		8	15	25	11	7
Home health care work	7		5	21	24	8	21	27	1	7	13	24	11	2
Candy striper	3	1	4	14	13	4	11	20		3	9	13	5	5
Adult health volunteer work	1	2	2	8	11	1	10	13		1	7	8	6	2
Student nursing club	3	2	7	12	12	3	16	17		4	8	12	8	4
Red Cross or other	12	1	11	26	37	12	30	45		12	15	35	18	7
None	44	4	49	76	128	41	102	155	3	46	45	101	67	42
Sub Totals	197	26	200	375	537	194	461	675	5	202	239	484	271	140
% of Known	(1138)	2.3	17.6	32.9	47.2	(1141)	40.4	49.2	0.4	(1134)	21.1	42.7	23.9	12.3
AGE CATEGORIES														
AGE CATEGORIES														
Unknown	8			2	4	8	2	4		9	1	2		2
17-19	53	4	47	111	154	52	128	188	1	55	69	127	72	46
20-24	68	12	64	132	181	69	153	233	2	71	74	186	85	41
25-29	16	2	21	28	38	15	28	61	1	18	22	29	23	13
30-34	6	2	10	26	25	6	29	34		6	9	32	15	7
35-39	13	1	15	25	44	14	35	49		13	24	32	21	8
40-44	8	2	16	27	36	7	37	45		7	19	28	24	11
45-49	8	2	14	20	35	6	34	39		6	16	29	18	10
50-54	14	1	10	5	18	14	14	20		14	5	18	9	2
55+	3		3	6	10	3	5	13	1	3	1	8	6	4
Sub Total	197	26	200	380	541	194	463	682	5	202	239	489	273	142
% of Known	(1147)	2.3	17.4	33.1	47.2	(1150)	40.3	59.3	0.4	(1143)	20.9	42.8	23.9	12.4
STATUS: GRADUATE - DROP-OUTS														
STATUS														
Graduate	38	20	181	349	468	35	413	604	4	41	212	447	226	130
% of Known	(1018)	2.0	17.8	34.3	45.9	(1021)	40.4	59.2	0.4	(1015)	20.9	44.0	22.3	12.8
Drop-outs	159	6	19	33	77	159	52	82	1	161	28	44	47	14
% of Known	(135)	4.4	14.1	24.4	57.0	(135)	38.5	60.7	0.8	(133)	21.1	33.1	35.3	10.5
Sub-Total	197	26	200	382	545	194	465	686	5	202	240	491	273	144
Total % of Known	(1153)	2.3	17.3	33.1	47.7	(1156)	40.2	59.4	0.4	(1148)	20.9	42.8	23.8	12.5

TABLE E.3: STUDENT EXPRESSED SATISFACTIONS BY ABILITY LEVELS AND SCHOOL COMPLETION INDEX

UNKNOWN ABILITY N=40 (OTIS SCORE IS UNKNOWN)

SCHOOL COMPLETE INDEX	A. HOW HARD DO YOU HAVE TO WORK: No response	Not hard	Busy but not hard	Hard one-half the time	Hard almost all the time	B. VARIETY OF EQUIPMENT: No response	Every type	Many types	Missing many	C. EXTENT STUDENT FELT QUAL. TO MAKE JUDGMENTS OF B: No response	Very well qualified	Qualified	Not very qualified	Not at all qualified	D. STUDENT'S OPINION OF INSTRUCTORS' KNOWLEDGE: No response	Always know	Usually know	Usually don't know	E. DEGREE INSTRUCTORS KNOW STUDENTS: No response	All well	Most well	Most don't	One-half well one-half don't
Low Completion	6					6				6					6				6				
Below Ave. Compl.	2			1	1	2	1	1		2		1	1		2	1	1		2	1	1		
Average	5		2	8	12	5	4	12	6	5	3	11	7	1	5	3	19		5	4	9	5	4
Above Average			1	1				2				1	1			2				1	1		
High Completion					1				1				1				1					1	
Sub Totals	13	-	3	10	14	13	5	15	7	13	3	13	10	1	13	6	21	-	13	6	11	6	4
% of Known	(27)	-	11.1	37.0	51.9	(27)	18.5	55.6	25.9	(27)	11.1	48.2	37.0	3.7	(27)	22.2	77.8	-	(27)	22.2	40.8	22.2	14.8
SCHOOL COMPL. INDEX	HIGH ABILITY N=318 (OTIS SCORE OF 112 AND ABOVE)																						
Low Completion	8	1	4	7	15	8	9	15	3	8	3	19	3	2	8	16	10	1	8	5	11	6	5
Below Ave. Compl.	16		6	18	17	15	6	30	6	14	2	28	10	3	15	27	15		15	13	16	10	3
Average	8	1	21	25	46	8	16	58	19	8	11	62	18	2	8	30	63		8	20	40	20	13
Above Average	1		20	39	32	1	10	54	27	1	4	62	23	2	1	28	61	2	2	18	36	23	13
High Completion	1		5	15	12	11	5	26	1	1	2	19	10	1	1	10	22		2	4	17	6	4
Sub Totals	34	2	56	104	122	33	46	183	56	32	22	190	64	10	33	111	171	3	35	60	120	65	38
% of Known	(284)	0.7	19.7	36.6	43.0	(285)	16.1	64.2	19.7	(286)	7.7	66.4	22.4	3.5	(285)	38.9	60.0	1.1	(283)	21.2	42.4	23.0	13.4
SCHOOL COMPL. INDEX	MIDDLE ABILITY N=685 (OTIS SCORE OF 97-111)																						
Low Completion	22	3	18	20	33	23	24	40	9	21	10	43	17	5	21	28	46	1	24	8	31	27	6
Below Ave. Compl.	25	2	15	38	50	22	26	66	16	21	7	77	21	4	22	63	45		23	23	51	20	13
Average	25	10	42	52	87	26	30	121	39	27	21	118	48	2	25	75	116		25	42	87	44	18
Above Average	6	1	18	47	69	7	28	82	24	6	10	79	42	4	8	52	81		9	33	59	26	14
High Completion	4	1	18	40	39	5	15	71	11	4	3	55	36	4	6	33	63		4	15	40	25	18
Sub Totals	82	17	111	197	278	83	123	380	99	79	51	372	164	19	82	251	331	1	85	121	268	142	69
% of Known	(603)	2.8	18.4	32.7	46.1	(602)	20.4	63.1	16.5	(606)	8.4	61.4	27.1	3.1	(603)	41.6	58.2	0.2	(600)	20.2	44.6	23.7	11.5
SCHOOL COMPL. INDEX	LOW ABILITY N=307 (OTIS SCORE 96 AND BELOW)																						
Low Completion	26	1	6	20	39	27	17	39	9	26	6	39	20	1	25	24	43		28	9	18	29	8
Below Ave. Compl.	24	2	5	9	23	25	7	21	10	25	4	27	7		24	16	23		24	11	17	6	5
Average	14	3	11	20	35	13	12	42	16	13	6	40	23	1	13	30	39	1	13	17	31	15	7
Above Average	2	1	6	7	20	2	6	22	6	2	4	20	10		2	15	19		2	12	8	6	8
High Completion	2		2	15	14	2	11	13	7	2		17	13	1	2	12	19		2	4	18	4	5
Sub Totals	68	7	30	71	131	69	53	137	48	68	20	143	73	3	66	97	143	1	69	53	92	60	33
% of Known	(239)	2.9	12.6	29.7	54.8	(238)	22.3	57.5	20.2	(239)	8.4	59.8	30.5	1.3	(241)	40.3	59.3	0.4	(238)	22.3	38.6	25.2	13.9
SCHOOL COMPL. INDEX	ALL ABILITY GROUPS																						
Low Completion	62	5	28	47	87	64	50	94	21	61	19	101	40	8	60	68	99	2	66	22	60	62	19
Below Ave. Compl.	67	4	26	66	91	64	40	118	32	62	13	133	39	7	63	107	84		64	48	85	36	21
Average	52	14	76	105	180	52	62	233	80	53	41	231	96	6	51	138	237	1	51	83	167	84	42
Above Average	9	2	45	94	121	10	44	160	57	9	18	162	76	6	11	97	161	2	13	64	104	55	35
High Completion	7	1	25	70	66	8	31	110	20	7	5	91	60	6	9	55	105		8	23	75	36	27
GRAND TOTALS	197	26	200	382	545	198	227	715	210	192	96	718	311	33	194	465	686	5	202	240	491	273	144
% of Known	(1153)	2.3	17.3	33.1	47.3	(1152)	19.7	62.1	18.2	(1158)	8.3	62.0	26.9	2.8	(1156)	40.2	59.4	0.4	(1148)	20.9	42.8	23.8	12.5

TABLE E.3 (Continued): STUDENT EXPRESSED SATISFACTIONS BY ABILITY LEVELS AND SCHOOL COMPLETION INDEX

UNKNOWN ABILITY N=40 (OTIS SCORE IS UNKNOWN)

SCHOOL COMPLETION INDEX	F. STUDENT"S ABILITY TO LEARN FROM INSTRUCTORS: No response	Very high beat teachers	High better than average	Average same as others	Below average teachers	G. EXTENT STUDENT FELT QUAL. TO MAKE JUDGMENTS OF E & F: No response	Very well qualified	Qualified	Not very qualified	Not at all qualified	H. RATING OF SCHOOL IF ADVISING A FRIEND: No response	Very high	Above average	Average	Below average	Very low	Total Possible N of Ability N	Total Possible N of Ability %	Total Possible N of Satisfactions N	Total Possible N of Satisfactions %
Low Completion	6					6					6						6	15.0		
Below Ave. Compl.	2	1	1			2		2			2	1					4	10.0	2	7.4
Average	5	3	11	7	1	5	3	16	3		5	4	13	5			27	67.5	22	81.5
Above Average		1	1					2				1	1				2	5.0	2	7.4
High Completion				1			1										1	2.5	1	3.7
Sub Totals	13	5	13	8	1	13	4	20	3	–	13	6	14	7	–	–	40	100.0	27	100.0
% of Known	(27)	18.5	48.2	29.6	3.7	(27)	14.8	74.1	11.1	–	(27)	22.2	51.9	25.9	–	–				
SCHOOL COMPL. INDEX	HIGH ABILITY N=318 (OTIS SCORE OF 112 AND ABOVE)																			
Low Completion	8	8	11	8		8	3	20	3	1	8	10	13	4			35	11.0	27	9.5
Below Ave. Compl.	15	9	22	11		16	4	32	5		14	10	29	4			57	17.9	43	15.0
Average	8	22	44	26	1	8	14	70	8	1	8	28	47	16	1	1	101	31.8	93	32.5
Above Average	1	21	43	27		1	7	72	11	1	1	18	42	30	1		92	28.9	91	31.8
High Completion	1	7	20	5		1	3	23	6		1	9	18	5			33	10.4	32	11.2
Sub Totals	33	67	140	77	1	34	31	217	33	3	32	75	149	59	2	1	318	100.0	286	100.0
% of Known	(285)	23.5	49.1	27.0	0.4	(284)	10.9	76.4	11.6	1.1	(286)	26.2	52.1	20.6	0.7	0.4				
SCHOOL COMPL. INDEX	MIDDLE ABILITY N=685 (OTIS SCORE OF 97-111)																			
Low Completion	22	16	35	21	2	21	15	55	4	1	21	28	27	20			96	14.0	75	12.4
Below Ave. Compl.	21	27	56	24	2	21	19	71	16	3	21	35	60	12		2	130	19.0	109	17.9
Average	26	38	100	47	5	27	28	135	26		25	44	99	42	2	4	216	31.5	191	31.4
Above Average	6	23	82	29	1	6	14	101	19	1	7	28	78	27		1	141	20.6	135	22.2
High Completion	4	31	44	20	3	4	5	79	14		5	40	43	11	2	1	102	14.9	98	16.1
Sub-Totals	79	135	317	141	13	79	81	441	79	5	79	175	307	112	4	8	685	100.0	608	100.0
% of Known	(606)	22.3	52.3	23.3	2.1	(606)	13.4	72.8	13.0	0.8	(606)	28.9	50.6	18.5	0.7	1.3				
SCHOOL COMPL. INDEX	LOW ABILITY N=307 (OTIS SCORE 96 AND BELOW)																			
Low Completion	26	10	31	23	2	26	10	46	10		27	20	28	16	1		92	30.0	67	27.8
Below Ave. Compl.	25	17	16	5		25	9	27	2		24	13	19	4		3	63	20.5	39	16.2
Average	14	20	31	17	1	14	12	50	7		13	23	25	20	2		83	27.0	70	29.0
Above Average	2	7	17	9	1	2	4	26	4		2	10	16	8			36	11.7	34	14.1
High Completion	2	7	20	4		3	1	23	6		2	6	17	7	1		33	10.8	31	12.9
Sub-Totals	69	61	115	58	4	70	36	172	29	–	68	72	105	55	4	3	307	100.0	241	100.0
% of Known	(238)	25.6	48.3	24.4	1.7	(237)	15.2	72.6	12.2	–	(239)	30.1	43.9	23.0	1.7	1.3				
SCHOOL COMPL. INDEX	ALL ABILITY GROUPS																			
Low Completion	62	34	77	52	4	61	28	121	17	2	62	58	68	40	1		229	17.0	169	14.5
Below Ave. Compl.	63	54	95	40	2	64	32	132	23	3	61	59	108	21		5	254	18.8	193	16.6
Average	53	83	186	97	8	54	57	271	44	1	51	99	184	83	5	5	427	31.6	376	32.4
Above Average	9	52	143	65	2	9	25	201	34	2	10	57	137	65	1	1	271	20.1	262	22.6
High Completion	7	45	84	30	3	8	10	125	26		8	55	78	24	3	1	169	12.5	162	13.9
GRAND TOTALS	194	268	585	284	19	196	152	850	144	8	192	328	575	233	10	12	1350	100.0	1162	100.0
% of Known	(1156)	23.2	50.6	24.6	1.6	(1154)	13.2	73.6	12.5	0.7	(1158)	28.3	49.7	20.1	0.9	1.0				

TABLE E-4: STUDENTS' EXPRESSED SATISFACTIONS BY PRIOR HEALTH EXPERIENCE, AGE GROUPS, AND SCHOOL COMPLETION

PRIOR HEALTH EXPERIENCE

PRIOR HEALTH EXPERIENCE	STUDENTS ABILITY TO LEARN FROM INSTRUCTOR: No Response	Very high best teacher	High better than average	Average same as others	Below average teachers	RATING OF SCHOOL IF ADVISING FRIEND: No response	Very high	Above average	Average	Below average	Very low	AMOUNT OF NEW LEARNING: No response	All new	Most new	1/2 new	Less than 1/2 new	Hardly any new	Total N Possible Prior Health Experience N	%	Total N Possible Satisfactions N	%
Unknown	17	3	9	2	1	17	5	9	1			17	5	6	4			(32)		15	1.3
Nurse aide or unlicensed PN	36	132	270	144	7	84	164	274	103	7	7	85	92	336	108	15	3	639	48.5	556	47.9
Health related incidental patient contact	16	18	24	15		16	16	23	17		1	16	2	40	11	4		73	5.6	57	4.9
Health related no patient contact	7	12	36	11		7	19	25	15			7	9	28	21	1		66	5.0	59	5.1
Home health care work	8	9	30	10		7	15	28	7			7	6	33	9	2		57	4.3	50	4.3
Candy striper	3	6	19	6	1	4	8	16	7			4	5	21	4	1		35	2.7	32	2.8
Adult health volunteer work	1	7	11	4	1	1	10	13				1	3	12	8			24	1.8	23	2.0
Student nursing club	3	8	18	6	1	3	9	16	7		1	3	3	21	9			36	2.7	33	2.8
Red Cross or other	12	23	36	15	1	11	22	45	9			11	8	46	20	2		87	6.6	76	6.5
None	41	50	132	71	7	42	60	126	67	3	3	42	46	154	48	10	1	301	22.8	260	22.4
Sub-Totals	194	265	576	282	18	192	323	566	232	10	12	193	174	691	238	35	4	1350		1161	
% of Known	(1141)	23.2	50.5	24.7	1.6	(1143)	28.3	49.5	20.3	0.9	1.0	(1142)	15.2	60.5	20.8	3.1	0.4	(1318)	100.0		100.0

AGE CATEGORIES

AGE CATEGORIES												Total N Possible Age Categories N	%	Total N Possible Experiences N	%
Unknown	8	1	4		1	8	2	4				(14)		6	0.5
17-19	52	77	168	68	4	50	105	148	60	2	4	369	27.6	319	27.5
20-24	68	90	207	87	5	67	111	194	76	3	6	457	34.2	390	33.6
25-29	15	17	38	30	5	16	22	46	20	1		105	7.9	90	7.8
30-34	6	13	32	18		6	13	38	11		1	69	5.2	63	5.4
35-39	14	25	36	23		15	17	48	16	1	1	98	7.3	85	7.3
40-44	8	20	40	20	1	7	26	37	19			89	6.7	82	7.1
45-49	6	14	44	15		6	21	34	16	2		79	5.9	73	6.3
50-54	14	9	11	13	1	14	8	17	8	1		48	3.6	34	2.9
55+	3	2	5	10	2	3	3	9	7			22	1.6	19	1.6
Sub-Total	194	267	581	284	18	192	326	571	233	10	12	1350		1161	
% of Known	(1150)	23.2	50.5	24.7	1.6	(1152)	28.3	49.6	20.2	0.9	1.0	(1336)	100.0		100.0

STATUS: GRADUATE - DROPOUTS

STATUS												Total N Possible Status N	%	Total N Possible Satisfactions N	%
Graduates	34	247	512	249	14	32	293	512	202	8	9	1056	78.2	1024	88.3%
% of Unknown	(1022)	24.2	50.1	24.3	1.4	(1024)	28	50	19.7	.8	.9	294	21.8	135	11.7
Dropouts	160	21	73	35	5	160	35	63	31	2	3	1350	100.0	159	100.0
% of Known	(134)	15.7	54.5	26.1	37	(134)	26.1	47	23.1	1.5	2.3				
Sub-Total	194	268	585	284	19	192	328	575	233	10	12	1056			
Total % of Known	(1156)	23.2	50.6	24.6	1.6	(1158)	28.3	49.7	20.1	0.9	1.0	294			

APPENDIX F

EMPLOYMENT AND PREFERENCE FOR EMPLOYMENT OF GRADUATES AND DROPOUTS

TABLE F.1: STUDENTS EXPRESSED COMPETENCE AND CONFIDENCE TO PERFORM AND SATISFACTION WITH PREPARATION IN BASIC NURSING AREAS

	Competence to Perform					Confidence to Perform					Satis. with PN Educ.				
Nursing Areas	Very	Somewhat	Undecided	Not Very	Not at All	Very	Somewhat	Undecided	Not Very	Not at All	Very	Somewhat	Undecided	Not Very	Not at All
Basic Nsg.	498	511	17	4	0	538	468	17	4	0	680	277	14	44	11
Nsg. Care of Adults	516	501	9	3	0	525	486	10	8	0	649	318	15	40	5
Long Term/Geriatrics	435	505	59	28	0	463	479	55	29	2	550	357	49	51	17
Nsg. Care of Children	491	477	46	15	0	524	442	31	31	0	551	340	40	80	16
Nsg. Mothers/New-born	529	436	43	17	2	522	433	46	21	4	671	244	29	66	17
Psychiatric	137	334	150	124	56	140	336	141	126	66	160	194	106	156	146

Note: N = Approximately 1036 for each rating. Only positive responses shown.

TABLE F.2: PREFERENCE FOR TYPE OF NURSING SERVICE WHILE IN PN SCHOOL AND LATER EMPLOYMENT

Type of Employment	Student's Preference						Graduate's Actual Employment					
	Illinois		Iowa		Total		Illinois		Iowa		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
General Hosp.	334	56.6	212	49.5	546	53.5	432	81.3	285	74.0	717	78.2
Spec. Hosp.	39	6.6	21	4.9	60	5.9	33	6.2	10	2.6	43	4.7
Psych. Inst.	38	6.4	29	6.7	67	6.6	2	0.4	18	4.7	20	2.2
Inst. for Mentally Retarded	14	2.4	6	1.4	20	1.9	2	0.4	2	0.5	4	0.4
T.B. or Comm.	2	0.3	--	---	2	0.2	--	---	1	.3	1	0.1
Doctor's Office	100	16.9	107	24.9	207	20.3	13	2.4	10	2.6	23	2.5
Private Duty	11	1.9	5	1.2	16	1.6	6	1.1	--	---	6	0.7
Public Health Agency	17	2.9	19	4.4	36	3.5	5	0.9	--	---	5	0.5
Nursing Home or Geriatrics	28	4.8	29	6.7	57	5.6	39	7.3	59	15.3	98	10.7
Other	7	1.2	2	0.5	9	0.9	--	---	--	---	--	---
Unknown	8	---	2	---	10	---	115	---	24	---	139	---
TOTAL	598	---	432	---	1030	---	647	---	409	---	1056	---
N and % Known	590	100.0	430	100.0	1020	100.0	532	100.0	385	100.0	917	100.0

All Percentages based on known cases.

TABLE F.3: STUDENTS' PREFERENCE FOR ASSIGNMENT AND AREA OF EMPLOYMENT ON FOLLOW-UP

Preference Duty Area	Assignments in General Hospitals: Clinical Areas: General Duty	Geriatrics	Medical	Medical - Surgical	Surgical	Orthopedics	Pediatrics	Obstetrics	Sub-total N	Sub-total %	Specialty Assignments: Operating Room	Intensive Care	X-ray Lab.	Emergency Room	Medications	Administrative Supervisory - Other	Rehabilitation	Sub-total N	Sub-total %	Assignments Outside General Hospitals: Doctor's Office	Private Duty	Psychiatric	Nursing Home	Other Duties	Sub total	GRAND TOTAL N	GRAND TOTAL %
Care of Adults																											
High	48	21	61	107	93	12	20	28	390	58.0	2	2.3	4	8	19	26	1	83	56.1	8	1	6	8	4	27	500	56.5
Medium	19	19	29	50	39	7	29	37	229	34.1	2	13	2	6	12	14	3	52	35.1	11	3	6	4	2	26	307	34.7
Low	3	10	7	8	8	1	6	10	53	7.9	1	4	1	0	3	3	1	13	8.8	3	0	7	2	0	12	78	8.8
Sub-total	70	50	97	165	140	20	55	75	672	100.0	5	40	7	14	34	43	5	148	100.0	22	4	19	14	6	65	885	100.0
Geriatrics																											
High	17	24	18	23	24	1	3	7	117	17.5	2	8	2	1	8	14	2	37	25.0	2	1	3	5	1	12	166	18.8
Medium	21	10	33	57	31	6	15	17	190	28.4	1	12	1	5	10	11	0	40	27.0	5	1	6	4	2	18	248	28.1
Low	32	16	46	84	82	13	37	51	361	54.1	2	20	4	8	16	18	3	71	48.0	15	2	10	6	3	36	468	53.1
Sub-total	70	50	97	164	137	20	55	75	668	100.0	5	40	7	14	34	43	5	148	100.0	22	4	19	15	6	66	882	100.0
Pediatrics																											
High	25	20	43	71	61	12	41	39	312	46.6	2	18	3	6	13	16	2	60	40.6	12	2	6	8	4	32	404	45.8
Medium	35	21	34	71	55	4	13	31	264	39.5	2	19	2	7	13	18	0	61	41.2	9	1	10	6	2	28	353	40.0
Low	10	9	20	22	21	4	2	5	93	13.9	1	3	2	1	8	9	3	27	18.2	1	1	2	1	0	5	125	14.2
Sub-total	70	50	97	164	137	20	56	75	669	100.0	5	40	7	14	34	43	5	148	100.0	22	4	18	15	6	65	882	100.0
Obstetrics																											
High	40	26	47	89	71	11	39	65	388	57.9	3	18	3	8	20	17	2	71	48.0	19	4	11	6	2	42	501	56.7
Medium	21	18	35	60	51	8	13	7	213	31.7	1	17	4	5	8	19	1	55	37.1	3	0	1	6	3	13	281	31.8
Low	9	6	15	16	17	1	3	3	70	10.4	1	5	0	1	6	7	2	22	14.9	0	0	6	3	1	10	102	11.5
Sub-total	70	50	97	165	139	20	55	75	671	100.0	5	40	7	14	34	43	5	148	100.0	22	4	18	15	6	65	884	100.0
Psychiatric																											
High	13	9	22	32	22	3	4	10	115	17.4	0	9	0	3	7	11	2	32	21.8	3	0	9	1	2	15	162	18.6
Medium	16	13	24	36	44	7	19	25	184	27.8	3	7	5	4	13	7	3	42	28.6	4	3	7	6	1	21	247	28.3
Low	41	26	49	94	70	10	32	40	362	54.8	2	24	2	7	13	25	0	73	49.6	15	1	3	7	3	29	464	53.1
Sub-total	70	48	95	162	136	20	55	75	661	100.0	5	40	7	14	33	43	5	147	100.0	22	4	19	14	6	65	873	100.0
Public Health																											
High	6	8	11	36	29	1	3	9	103	15.4	1	5	3	2	3	5	1	20	13.5	4	0	4	2	1	11	134	15.2
Medium	24	14	34	44	49	8	21	30	224	33.5	1	11	0	1	12	16	3	44	29.7	10	0	7	3	3	23	291	33.0
Low	40	27	51	85	60	11	31	36	341	51.1	3	24	4	11	19	22	1	84	56.8	8	4	7	10	2	31	456	51.8
Sub-total	70	49	96	165	138	20	55	75	668	100.1	5	40	7	14	34	43	5	148	100.0	22	4	18	15	6	65	881	100.0
Total Employed	71	50	99	166	141	20	55	75	677		5	41	7	14	34	43	5	149		23	4	20	17	6	70		
% In Category	7.9	5.6	11.0	18.5	15.7	2.2	6.1	8.4			0.6	4.6	0.8	1.6	3.8	4.8	0.6			2.6	0.4	2.2	1.9	0.7		896	

TABLE F.4: STUDENTS' PREFERENCES FOR CLINICAL AREAS BY GRADES AWARDED IN THE AREA

First and Second Preference	PN School Grades by Clinical Areas									
	A		B		C		D-F		Total	
	N	%	N	%	N	%	N	%	N	%
Medical-Surgical	68	14.0	263	54.3	142	29.3	11	2.3	484	30.0
Geriatrics	29	11.0	78	54.5	34	23.8	2	1.4	143	8.9
Pediatrics	77	18.6	213	51.4	120	28.98	4	9.7	414	25.7
Obstetrics	135	26.4	242	47.5	127	24.9	6	1.2	510	31.7
Psychiatric	15	25.0	31	51.7	12	20.0	2	0.9	60	3.7
Sub-Total	324		827		435		25		1611	
%	20.1		51.3		27.0		1.6			100.0
Third and Fourth Preference										
Medical-Surgical	51	16.2	146	46.5	105	33.4	12	3.8	314	24.8
Geriatrics	55	23.7	109	46.98	64	27.6	4	1.3	232	18.3
Pediatrics	63	10.8	179	50.7	104	29.5	7	2.0	353	27.9
Obstetrics	51	18.4	144	52.0	75	27.1	7	2.5	277	21.9
Psychiatric	27	29.6	39	42.9	21	23.1	4	4.4	91	7.2
Sub-Total	247		617		369		34		1267	
%	19.5		48.7		29.1		2.7		100.0	
Fifth and Sixth Preference										
Medical Surgical	13	14.4	47	52.2	26	28.9	4	4.4	90	9.5
Geriatrics	109	24.3	216	48.2	116	25.9	7	1.6	448	47.8
Pediatrics	24	19.7	58	47.5	39	31.96	1	0.8	122	13.0
Obstetrics	17	17.0	47	47.0	34	34.0	2	2.0	100	10.7
Psychiatric	38	21.34	93	52.24	40	22.5	7	3.9	178	19.0
Sub-Total	201		461		255		21		938	
%	21.4		49.1		27.3		2.2			100.0

TABLE F.5: LABOR FORCE AND NON-LABOR FORCE ACTIVITIES AT TIME OF APPLICATION AND FOLLOW-UP - GRADUATES

ACTIVITIES AT TIME OF APPLICATION		ACTIVITIES AT TIME OF FOLLOW-UP																						
		LABOR FORCE ACTIVITIES									NON-LABOR FORCE ACTIVITIES													
		LPN		Semi-Skilled Health		Other Non-Health		Sub-Totals by F-T, P-T		Total Labor Force	College General	Health RN and Tech.	Skilled	Short Term Health	Student Other	Sub-Total Education	Unemployed	Housewife	Unknown	Total Non-Labor Force Activities	TOTALS AT APPLICATION
LABOR-FORCE		F-T	P-T	F-T	P-T	F-T	P-T	F-T	P-T												
Professional and others	F-T	5						5		5											5
	P-T	2						2		2											2
	Unspec.																				
Tech. Health	F-T	1						1		1											1
	P-T																				
	Unspec.																				
LPN and Skilled Health	F-T	4						4		4											4
	P-T	2						2		2											2
	Unspec.	4						4		4											4
Skilled Non-Health	F-T	30						30		30							1	3		4	34
	P-T	13	1			1		14	1	14		1				1		1		1	17
	Unspec.	4						4		4											4
Semi-Skilled Non-Health	F-T	62	5	1				63	5	68	1	1	1			3	3	5		8	79
	P-T	24	2		1			24	3	27			1			1		1		1	29
	Unspec.	20	1					20	1	21		2			1	3	1			1	25
Semi-Skilled Health	F-T	273	20	2		1	1	276	21	297		5		3	1	9	2	11		13	319
	P-T	55	4	2		1	1	58	5	63	1					1		1		1	65
	Unspec.	68	6					68	6	74		2	1			3	3	3		6	83
Unskilled Non-Health	F-T	58	4				1	58	5	63		1				1		4		4	68
	P-T	23	4					23	4	27		1	1			2		4		4	33
	Unspec.	16	2					16	2	18								3		3	21
Unskilled Health	F-T	5						5		5											5
	P-T	4	1					4	1	5											5
	Unspec.	3						3		3											3
Sales	F-T	14	2					14	2	16				1		1					17
	P-T	8	1					8	1	9		1				1		2		2	12
	Unspec.	11	1					11	1	12		1		1		2					14
Waitress and General	F-T	11	2					11	2	13								2		2	15
	P-T	11	3					11	3	14								2		2	16
	Unspec.	8						8		8				1		1		1		1	10
Sub-Totals	F-T	463	33	3		1	2	467	35	502	2	15	4	6	2	29	6	25		31	562
	P-T	142	16	2	1	2	1	146	18	158								11		11	175
	Unspec.	134	10					134	10	144							4	7		11	155
NON-LABOR FORCE																					
Unemployed		69	3					69	3	72	1	2				3	10	2		12	87
Housewife		20	1					20	1	21					1	1		1		1	23
Unknown		14	1					14	1	15		1				1			38	38	54
Sub-Totals		103	5					103	5	108	1	3			1	5	10	3	38	51	164
FOLLOW-UP TOTALS		842	64	5	1	3	3	850	68	918	3	18	4	6	3	34	20	46	38	104	1056

TABLE F.9: LABOR FORCE AND NON-LABOR FORCE ACTIVITIES AT TIME OF APPLICATION AND FOLLOW-UP - DROPOUTS

ACTIVITIES AT TIME OF APPLICATION / LABOR FORCE		ACTIVITIES AT TIME OF FOLLOW-UP: LABOR FORCE ACTIVITIES: Skilled Health [1] F-T	Skilled Health [1] P-T	Skilled Non-Health F-T	Skilled Non-Health P-T	Semi-Skilled Health [2] F-T	Semi-Skilled Health [2] P-T	Other Non-Health F-T	Other Non-Health P-T	Waitress and General F-T	Waitress and General P-T	Sub-Total by F-T,P-T F-T	Sub-Total by F-T,P-T P-T	Total Labor Force	NON-LABOR FORCE ACTIVITIES: College General	Health RN and Tech.	PN	Skilled and Semi-Skilled Non-Health	Skilled Health	Sub-Total Education	Unemployed	Housewife	Unknown	Total Non-Labor Force	TOTALS FOR D-O AT APPLICATION	TOTALS FOR ALL ENROLLED AT APPLICATION
Professional and Other	F-T																									5
	P-T																									2
	Unspec.																									
Tech. Health	F-T																									
	P-T																									1
	Unspec.																									
LPN and Skilled Health	F-T	1										1		1											1	5
	P-T																									2
	Unspec.																									4
Skilled Non-Health	F-T			1						1		2		2				1		1		1	1	4	38	
	P-T				1								1	1											1	18
	Unspec.				1		1		1			1	2	3				2		2		2	2	7	11	
Semi-Skilled Non-Health	F-T	1		2		3						6		6	2		2	1		5		2	2	13	92	
	P-T								1				1	1								1	1	2	31	
	Unspec.	1			1	1	1	1		1		4	2	6			1		1	2		6	6	14	39	
Semi-Skilled Health	F-T	2	1	3		13	2	4				22	3	25		1	4	1		6		2	2	33	352	
	P-T			1		1		1				3		3			1	1		2		4	4	9	74	
	Unspec.					2		1				3		3			1	1		2	1	13	14	19	102	
Unskilled Non-Health	F-T	1				1		3		1		6		6			1			1		1	1	8	76	
	P-T	1		1		4		3				9		9		1	1	1		3		2	2	14	47	
	Unspec.			1		2	1	3				6	1	7							1	11	12	19	40	
Unskilled Health	F-T																					1	1	1	6	
	P-T			1					1			1	1	2		1				1		1	1	4	9	
	Unspec.																									3
Sales	F-T																									17
	P-T																									12
	Unspec.																									14
Waitress and General	F-T			1		1						2		2	1					1		1	1	4	19	
	P-T					1		1				2		2								2	2	4	20	
	Unspec.	1				2						3		3				1		1		2	2	6	16	
Sub-Totals	F-T	5	1	7		18	2	7		2		39	3	42	3	3	12	8	1	27		8	8	77	639	
	P-T	1		3	1	6		5	2			15	3	18								10	10	28	203	
	Unspec.	2		1	2	7	3	6		1		17	5	22							2	34	36	58	213	
NON-LABOR FORCE																										
Unemployed				2		2	1	1				5	1	6			1			1	2	3	5	12	59	
Housewife									1				1	1			1			1		6	6	8	31	
Unknown				2		4		3				9		9				1	1	2	2	4	94 100	111	165	
Sub-Totals				4		6	1	4	1			14	2	16			2	1	1	4	4	13	94 111	131	295	
FOLLOW-UP TOTALS		8	1	15	3	37	6	22	3	3		85	13	98	3	3	14	9	2	31	6	65	94 165	294	1350	

[1] Includes 2 LPNs

[2] Includes one unskilled health