

SELECTED VARIABLES RELATIVE TO PERSISTING AND
NON-PERSISTING STUDENTS IN SIX TWO YEAR
REGISTERED NURSE PROGRAMS IN OKLAHOMA

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Submitted to the Faculty of the Graduate College
of the Oklahoma State University
in partial fulfillment of the requirements
for the Degree of
DOCTOR OF EDUCATION
December, 1974

MAY 11 1976

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ACKNOWLEDGMENTS

The writer is indebted to the six institutions whose students were included in the study population. Although appreciation is expressed to the administration of these institutions for permission to use student records, a special thanks is extended to the nursing program directors. Ms. Eugenia Tickle, RN., Northern Oklahoma College; Ms. Bernice J. Regaldo, RN., Eastern Oklahoma College; Ms. Delores Kruger, RN., Cameron College; Ms. Billie Towers, RN., Bacone College; and Ms. Winnie Dunham, RN., Murray State College, all rendered valuable assistance. The writer is grateful to Ms. Martha Doyle, RN., Tulsa Junior College, for gathering the information requested from that institution.

The writer expresses gratitude to her advisory committee: Dr. Lloyd Wiggins, Director of EPDA 552 program; Dr. Josephine Hoffer, who retired before the completion of this study; Dr. Walter Starks; Dr. George Arquitt; and Dr. Charles Hopkins.

Appreciation to Dr. Robert Price, chairman of the advisory committee, cannot be expressed with a mere thanks. This "Teacher of Teachers" encouraged, assisted, and directed progress that made completion of this study possible.

Dr. James Key provided much needed assistance in the development of the proposal and the statistical analysis of the data collected.

A special note of appreciation is extended to my husband, Donel, and our children--Iris, Ellen, Alan, and Lynn--whose encouragement and understanding made the entire advanced study program possible.

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CHAPTER I

INTRODUCTION

The supply of Registered Nurses in the United States is made available from graduates of Baccalaureate Degree, Associate Degree, and Hospital Diploma Nursing programs. Despite increasing numbers of graduates of these programs, there remains an undersupply of RNs in many sections of our nation today. Currently, the RN ranks among the top ten in demand of the labor market.

Historically, nursing education dates from the 1850-1860's. The technical level of preparation as prescribed by the two-year associate degree is more recent, however, dating to 1951-1952.

The first Associate Degree nursing program implemented in Oklahoma was at Bacone College in 1963. Further impetus has been given to this type of program through the development of a program at Cameron College in 1966; OSU Technical Institute in 1969; Murray State College, Tulsa Junior College, Eastern State College, Northern Oklahoma College, all in 1971; and at Seminole Junior College in 1972.

Statement of the Problem

In Oklahoma, according to the most recent Oklahoma Health Manpower Needs report (1973), the Registered Nurse is in short supply. This undersupply is made more critical by the fact that approximately 40 percent of the students enrolled in Associate Degree nursing programs fail

to complete. Since these students are selected for admission, it would seem that there is a lack of adequate selection criteria. A study of characteristics of persisting and non-persisting students could provide additional criteria for future selection of students.

Purpose of the Study

The purpose of this study is to describe and relate variables pertaining to both persisting and non-persisting nursing students.

Need for the Study

A prominent worker in nursing education research decries the current situation as follows: "The drop out rate among nursing students has been alarming to schools of nursing for years, a concern that is made more intense by the shortage of registered nurses" (Levitt, 1971). The National League of Nursing (1970) reports an attrition rate of 34 percent among all schools of nursing with a rate of 50 percent among associate degree nursing students. Of those comprising this 50 percent, 22 percent were found attributable to academic "failure" with the remaining 28 percent ascribed as "dropouts" due to varied reasons.

Schools in Oklahoma offering the associate degree nursing program limit their enrollment. Limited enrollments are ascribed as due to (1) high program costs, (2) limited clinical facilities, (3) limited classroom facilities, (4) faculty shortages, or combinations of these factors.

Selection of students is based on information gained from:

1. Data generally assembled for application for admission to the institution.

2. Application directly to the Nursing Department.
3. ACT test scores.
4. College and/or high school transcripts.
5. Personal references and/or interviews (where required).

The selection process was not found consistent from school to school and often tended to reflect a unique response to the local situation. Some schools report that they may have several applicants for each vacancy as it exists in the nursing program. In these situations, there is a growing concern that eventually it will be necessary to implement a more highly selective process. In addition to selection per se, many faculties do offer occupational-vocational guidance in an effort to assist students in making meaningful career choices.

Most of the faculty recruited for service in the establishment of the new programs previously mentioned had had experiences in either Hospital Diploma or Baccalaureate Degree programs. Hospital Diploma and Baccalaureate Degree programs have developed criteria for selection of students; the same criteria have been utilized by admissions committees of Associate Degree programs. The "nursing" factor was early established as an important element for consideration in the selection process. This continues in importance since most students are found to have met or surpassed institutional admission requirements.

In the 1968 edition of the publication Rules and Regulations Relating to Nursing Education, Licensure and Practices in the State of Oklahoma, the definite statement is to be found that: "All associate degree nursing programs in Oklahoma must be approved by the Oklahoma Board of Nurse Registration and Nursing Education." During 1971 the recommended curriculum for associate degree nursing programs included:

Biological and Physical Sciences

Behavioral Sciences

and Nursing

The nursing content is further prescribed as, "The nursing content shall be drawn from the major health problems of society, persons in all age groups and include promotion and maintenance of health, prevention, detection and rehabilitation" (OBNR & NE, 1968). The curriculum offerings across the state are almost constant. Appendix A includes the curricula of the six programs included in this study. Furthermore, the nursing courses are offered in a progressive sequence, necessitating a year's delay if a nursing course is not completed in the usual sequence.

The careful and intensive processes used in the selection of students for nurses training has been an acceptable practice for many years. In past years the selection of student nurses often may have been predicated first of all upon the need for possession of physical stamina. Current selection guidelines reflect somewhat more sophisticated attempts to measure "nursing" interest and predict academic and nursing performance abilities.

The number of students completing professional nursing education in Oklahoma has increased steadily during the past ten years. According to information published by the Oklahoma Board of Nurse Registration and Nursing Education (OBNR & NE, 1970), during 1965 44 students graduated from Baccalaureate Degree programs, nine from Associate Degree programs, and 111 from Hospital Diploma programs. During 1970 these numbers increased to 61 from Baccalaureate Degree programs, 36 from Associate Degree programs, and 127 from Hospital Diploma programs. The projected graduation rates for 1975 include 303 from Baccalaureate Degree programs,

171 from Associate Degree programs, and 95 from Hospital Diploma programs.

The Cycle VI Report--Occupational Training Information System (1974) lists a net demand for 241 Registered Nurses, including Associate Degree, in the state of Oklahoma. This undersupply is assigned to most of the 11 designated economic areas. An increased percentage of completions would solve some of this continuing shortage with little increase in costs.

Assumption Basic to the Study

A basic assumption is that the students selected for this study gave accurate responses to questions included in admission information.

Limitations of the Study

The population researched in this study consisted of individuals having attained a designated status, i.e. the selection for admission to a two year professional nurse education program. The study design tended to bolster distinct research limitations. These were implied in the variety of selection criteria used by the various schools. An additional limitation is the lack of standardization of the number of likely candidates among which schools made their selections. Among further limitations is the lack of consideration of any intervening circumstances occurring since the time of admission.

Definitions

There are three types of nursing education programs which prepare for licensure as a registered nurse (Assessment of Nursing in Oklahoma 1970, 1971):

HOSPITAL DIPLOMA PROGRAM (HDP) -- The hospital course in nursing is the traditional program in nursing and is usually 27 to 36 months in length and leads to a diploma in nursing. The first year is usually devoted to courses in the biological and physical sciences and human and cultural understandings and such courses are usually completed in an accredited college or university. Instruction and related clinical experience are focused primarily on the nursing care of patients in hospitals. This instruction combines theory and practice and includes medical, surgical, maternity, pediatric and psychiatric nursing courses. Graduates of a hospital diploma program are prepared to plan with members of the health team for the care of patients and may be responsible for leadership roles. At the present time, a graduate of a hospital diploma program may receive some credit toward a baccalaureate degree, according to the policies of the individual institution (p. 93).

BACCALAUREATE DEGREE PROGRAM (BDP) -- A baccalaureate degree program in nursing includes courses in biological, physical and behavioral sciences, in languages and mathematics and an upper division major in nursing. The curriculum is planned so that students receive an education in liberal arts as well as in nursing. Students receive theory and clinical practice in the care of adults and children in a variety of settings, including hospitals, nursing homes, public health agencies, day care centers, psychiatric hospitals, etc. The graduates of a baccalaureate degree program are prepared for staff positions in public health nursing and leadership roles in patient care and for study at the master's degree level to prepare for positions as clinical specialists, nurse faculty or administrators in nursing services and nursing education programs (p. 93).

ASSOCIATE DEGREE PROGRAM (ADP) -- The associate degree program is approximately two years in length and is usually established as an integral part of a community or junior college (or four year college). The curriculum consists of courses in general education and in nursing utilizing selected health care agencies which are concerned with preventative, remedial, supportive and rehabilitative aspects of nursing. The graduates of associate degree programs in nursing are prepared to give direct care to patients; to cooperate and share responsibility for their patients' welfare with other members of the nursing and health teams in hospitals and similar health care agencies. The graduate of an associate degree program may apply for admission to a baccalaureate degree program and receive some recognition for the courses completed in the associate degree program (p. 94).

Other definitions of terms used in this study include the following:

American Nurses Association (ANA) -- The national membership organization for registered nurses and the official spokesman for nursing.

National League for Nursing (NLN) -- A national voluntary organization that comprises nurses and other individuals who are concerned with the improvement of nursing care and nursing education and with meeting the nursing needs of the people. The NLN is the recognized national accrediting agency for all types of nursing education programs.

Oklahoma Board of Nurse Registration and Nursing Education (OBNR and NE):

The Oklahoma Legislature enacted the Oklahoma Nursing Practice Act which provides for legal control of nursing by the Oklahoma Board of Nursing Registration and Nursing Education. The OBNR & NE is responsible for licensing of registered and practical nurses, prescribing minimum standards for educational programs preparing nurses for licensure, and taking necessary and appropriate action relating to the violations of the law (Assessment of Nursing in Oklahoma in 1970, 1971, p. 5).

Registered Nurse (RN) -- The Oklahoma Nursing Practice Act requires that any person who practices or offers to practice professional nursing to be licensed as an RN and to submit sufficient evidence that he/she is qualified to practice. Licensure by examination requires completion of an approved high school course of study or the equivalent thereof as determined by the State Department of Education, completion of the basic professional nursing curriculum of an approved school of nursing curriculum of an approved school of nursing and holding a diploma or a degree therefrom, plus achieving a passing score (350 in each subject) on the State Board Test Pool Examination for registered nurse licensure.

State Board Test Pool Examination (SBTPE) or (SBE) --

The State Board Test Pool Examination for registered nurse licensure or practical nurse licensure is utilized as the licensing examination in Oklahoma. This is a national

standardized examination for licensure and is used by all U.S. jurisdictions. Oklahoma is a member of the Test Pool through its participation in the Council of State Boards of Nursing of the American Nurses' Association. The policies and procedures for the examination are established by the Council and implemented through committees authorized by the Council ("Nursing in Oklahoma," 1974, p. 2).

For purposes of this study, the following are presented as working definitions:

Previous Nursing Education is defined as:

1. Completion of a prescribed course of instruction of practical/vocational nursing leading to eligibility for state board licensure examination, and/or
2. Enrollment in an established school of nursing. This enrollment interval shall have included courses with designated nursing content.

Previous Nursing Employment is defined as paid employment for service in a nursing capacity, with a title such as Licensed Practical Nurse, nurse assistant, nurse aide, office nurse, orderly, military medic or nurse.

Persistor is defined as a student who was admitted to the Associate Degree Nursing Program during the fall of 1971 and continued with the same group to graduation during the spring of 1973.

Non-Persistor is defined as a student who was admitted to the Associate Degree Nursing Program during the fall of 1971 and did not continue with the same group to graduation during the spring of 1973.

CHAPTER II

REVIEW OF THE LITERATURE

The cost of incompleting nursing education warrants research designed to allow more discerning student selections. Studies have reported the use of achievement ability and personality factors to predict success in nursing education. The National League for Nursing (NLN) has devised a Pre-Nursing and Guidance test to identify "likely-to-succeed" students. Many faculties attempt to evaluate the student's desire as expressed by "I want to be a nurse." or "Nursing is what I want to do." Consideration is also given to the probable effects of too precise compliance to limited criteria for selection of nursing students.

Research completed by the NLN, based on admissions to schools of nursing 1971 - 1972, was reported during January, 1974. The percentage of men enrolled in Associate Degree Nursing Programs (ADP) is reported as 7.2 percent nation-wide. Although the northeast reported 6.1 percent, the midwest reported 6.6 percent, the south 8.4 percent, and the west 7.5 percent. Male enrollees in ADP represent the largest proportionate enrollment in Registered Nursing programs as the total percentage of enrollment in Hospital Diploma Programs (HDP) is only 4.9 percent and in Baccalaureate Degree Programs (BDP) is 5.7 percent.

Achievement and Success in Nursing Education

Ruiz and others (1967) reaffirmed the assumption that intelligence

is related to level of performance on measures such as licensure exams, but also found that students of equal intelligence might fail as well as succeed on the State Board Examination (SBE). Graduates of both HDP and BDP were included in the study. Michael and others (1966) found statistically significant coefficients of validity for measures of high school grade point average (HSGPA), reading comprehension and mathematic reasoning to academic course work included in the nursing curriculum.

Mueller and Lyman (1969) completed research in an attempt to pre-identify the 14 percent of the candidates who are unsuccessful in their first attempt at SBE. Aptitude and ability measurements were generally highly positively correlated with scores on SBE. The NLN (1971) reported that the NLN Comprehensive Achievement Test in Maternal and Child Nursing was the best predictor of success on SBE; however, all sections of the test were judged significant in their predictive qualities. Miller and others (1968) found six variables most efficient in predicting scores on SBE; these included Scholastic Aptitude Test (SAT) verbal score, father's educational level, age, high school graduation rank, number of college credits before entering the nursing program, and overall grade average at the end of the nursing program. This latter research had a sample size of only 116, and additional study is being done.

Hutcheson and others (1973) in a study of 50 Baccalaureate Degree Program students reached the conclusion that there were no significant relationships between demographic characteristics, socioeconomic status, scholastic aptitude, and achievement or between nursing school performance and whether a student graduated in sequence. Although there

was a strong relationship between scholastic aptitude and prior scholastic achievement, there was no evidence that would allow the inference of any relationship between demographic characteristics and scholastic variables and completion of the program in sequence.

In a study of ADP students, Reed and Feldheusen (1972) found that the addition of nursing school grades made a significant difference in predicting scores on SBE.

Beckman and Stiendler (1971) in research conducted among ADP students found the Scholastic Aptitude Test (SAT) and Wechsler Adult Intelligence Scale (WAIS) general information section were the best predictors of achievement in school as well as on SBE. Since these ADP students constituted the lower level of a "ladder" concept of nursing education, where admission was limited to those considered able to complete the Ph.D. portion, it does not represent an unbiased sample.

In studies completed among Hospital Diploma Program students, Cohen and Gesner (1972) concluded that high attrition rates of nursing students is not necessarily due to intellectual incapacities. They cited a range of emotional factors as well as poor basic preparation and study skills as major factors.

Other researchers, namely Tillinghurst and Norris (1968), Munday and Hoyt (1965), and Whittmey and others (1971), have concluded that achievement tests are valuable predictors of success in school and on the State Board Examination.

Personality Factors and Success in Nursing Education

Michael and others (1966) found that the Minnesota Multiphasic Personality Inventory (MMPI), Edwards Personality Preference Schedule

(EPPS) and 16 Personality Factor Inventory showed a lack of validity either for academic course work in nurses training or for rated performance on ward activities. Mueller and Lyman (1969) came to the same conclusions regarding personality factors and family background factors. Whittmeyer and others (1971) judged the Myers-Griggs Type Indicator and 16 Personality Factor Inventories less predictive than achievement tests among collegiate nursing students.

The use of Interest Inventories, both the Kuder Preference Record and the Strong Vocational Interest Blank, was the basis of research done by Mowbray and Taylor (1967) among Hospital Diploma Program students.

Their conclusions include:

The Kuder, Social Service Scale yielded significant mean differences between the most and least adjusted groups and between those who remain in school and those that do not. The Strong Vocational Interest Blank discriminated between those who remain in school and those who do not but failed to differentiate between the most and least adjusted groups (p. 78).

Rubin (1971) completed a study designed to demonstrate that the rate of student attrition could be reduced by implementing the methods of community psychology in a Hospital Diploma Program. Having achieved a 23.74 percent reduction in the attrition rate, it was concluded that there was strong support for the community psychology approach of intervention.

Pre-Nursing and Guidance Test

The NLN Measurement and Evaluation Services have devised and evaluated a test appropriately called NLN Pre-Nursing and Guidance Examination (PNG). In reports published in April, 1970, the department repeats the following conclusions:

1. PNG scores of entrants exceed those of applicants.
2. At each stage of the educational program, PNG scores of students who withdrew for academic (classroom and clinical) failure and
3. PNG scores of those who withdrew for non-academic reasons did not differ generally from those of students who remained in nursing.

In analyses of data by type of program it again showed that the academic failures invariably had achieved lower mean scores on PNG than the entrants and those who successfully completed each successive stage of the program.

The mean scores of successful students at successive stages in associate degree programs tended to exceed those in diploma programs in those tests that are dependent on verbal skills (Academic, Verbal, Reading Level and Social Studies) (National League for Nursing, 1970, p. 62).

Following additional statistical evaluation, the NLN (1970) on page 62 reported the following:

The canonical analyses of PNG and state board test scores produced a coefficient of .646 with one series of the examination and .639 with the other.

Although the report included significant levels of correlation between PNG scores and SBE scores for associate degree program graduates, the sample was only 120. This small sample demands further studies to establish validity.

Factors Regarded as Students' Interest in Nursing

Schools of nursing have long been aware that the student's concept of "nursing" as well as their relative role in nursing are major factors in achievement in schools of nursing. Mowbray and Taylor (1967) in relating the use of Interest Inventories concluded on page 78, "According to the attrition percentages, categorized in terms of withdrawal, the highest percentage withdrew because they disliked nursing."

Research designed to gain information regarding the students' concept of nursing and their personal role included the development of the Nursing Sentence Completion Test (NSC) composed of sentence stems which had elicited responses associated differentially with nursing student achievement. Thurston and others (1967) in a study with HDP students noted a significant relationship between achievement and the devised NSC.

Connelly (1970), conducting studies of freshmen in health related curricula and among nursing students, discovered "wanting to be a nurse" was important to practical nursing students. "Love of people" was the second highest factor of commitment considered by most students.

Pender (1971) suggested the following on page 71:

Is it possible that young women who choose nursing as a career have a more pronounced occupational orientation than do young women in the general college population? This commitment may provide the stimulus necessary for completion.

"Poor scholarship and insufficient challenge" were discovered by Rottkamp (1968) as students' reasons for leaving BDP. Although poor scholarship is measurable with standardized achievement tests, the lack of challenge reason requires thoughtful deliberation. Rottkamp continues with the charge that, "the image of professional nursing needs some nursing care," and also that "the task at hand is that of preventing disillusionment, for both the beginning student and the beginning practitioner of nursing."

The current trend in nursing education is a response to the first position paper issued by the American Nurses Association Committee on Education (1965) which recommended "that all nurses licensed to practice nursing should be prepared in institutions of higher education." The response included the shift from hours of nursing experience in the

hospital setting to fewer hours of laboratory experiences in a greater variety of settings. Perhaps the "insufficient challenge" listed by Rottkamp (1968) is a developmental reaction to this shift in emphasis. Furthermore, considering the before-mentioned "wanting to be a nurse," the lack of satisfying clinical experiences may contribute to students' disillusionments or desire to withdraw. Paynich (1971) discovered that students sought paid nursing experiences ". . . to gain experience in nursing." Students described the experiences as highly desirable to supplement their limited clinical laboratory experiences. In fact, these students were willing to lengthen their program to enlarge clinical practice opportunities. There can be no doubt that the student's desire "to be a nurse" is an important factor relating to success in the ADP.

Problems Associated With Critical Selection

Although the use of predictive measures should assist in the selection of students who are likely to succeed, the rigid use of the predictive measures has implications. Mueller (1969) indicates: "Very rigid use of predictors in student selection processes will eliminate more potential success than potential failure" (p. 265).

Whittmeyer and others (1971) state the following on page 345:

Selection procedures that are efficient and hold up well under replication are difficult to achieve and if they utilize personality measures, the end product might tend to be a somewhat stereotyped student body and suited to an existing curriculum-faculty grading system in nursing. If a collegiate nursing program does not have an over abundance of applicants, any effort to initiate improved selection techniques may also make it difficult if not impossible to meet student enrollment quotas.

There is further support of the practice of caution in determining admissions only on the basis of test scores. Smith (1956) studied selective college admissions and concluded on page 15: "Students with perseverance, drive and determination, even though they have low entrance test scores, seem to succeed in all fields of academic endeavor."

Kovacs (1970) studied the loss of potential graduate nurses if cut-off scores were adhered to rigidly. Based on 310 graduates of BDP, he determined that had standards been strictly enforced, "loss to the profession in terms of numbers of graduate nurses would have been greater than the loss in terms of numbers who did not graduate."

Additional evidence of the effectiveness of selective versus non-selective admission practices is derived from research completed in New York. The sample consisted of all students admitted to the nursing programs of nine selective and five non-selective ADP in the fall of 1963 and the fall of 1964 and graduating or attriting from the same nursing programs. Franklin (1970) reports:

The rate of academic failure in both selective and non-selective schools was high, as was the rate of attrition for all reasons. The differences, while statistically real, were not large and therefore the findings do not suggest that large consequences follow from non-selective admission practices.

Summary of Literature Review

Selection criteria for students entering nursing education programs have long included achievement scores and these have proved predictive. Success for these students appears dependent upon other factors such as

personality characteristics, motivation, and interest in nursing.

Although these factors are far less measurable, they appear to be determinants of success in nursing education programs.

CHAPTER III

METHODOLOGY AND DESIGN

In the paragraphs to follow, this chapter will (1) describe and identify the research design of the study, (2) describe the population and identify the related parameters and variables, (3) describe methods used for data collection and analysis, and (4) include a listing of the hypothesis to be tested.

Design

The design for this research is an Ex Post Facto design.

Kerlinger's (1966) definition is as follows:

Ex post facto research may be defined as that research in which the independent variable or variables may have already occurred, in which the researcher starts with the observation of a dependent variable or variables. He then studies the independent variable in retrospect for their possible relations to and effects on the dependent variable or variables.

Regarding the limitations of ex post facto design, Kerlinger cautioned: "Ex post facto research has three major weaknesses: (1) the inability to manipulate the independent variables, (2) the lack of power to randomize, and (3) the risk of improper interpretation."

Even with these recognized limitations this research design allows investigation of activities that have occurred and in that way provides valuable information that can be utilized in further research.

Population

The population for this study was drawn from students enrolled in the Associate Degree nursing program at the following institutions:

1. Bacone College
2. Cameron College
3. Eastern Oklahoma College
4. Murray State College
5. Northern Oklahoma College
6. Tulsa Junior College

Each of these colleges graduated students from their nursing program during 1973. OSU Technical Institute also graduated students during 1973. An examination of the available information relating to the 15 selected variables showed a lack of information, particularly information pertaining to students who would be classified as non-persistors. For this reason OSU Technical Institute's nursing students are not included in this study.

A selected population of 224 was established, with 110 classified as persistors and 114 as non-persistors. These group sizes were used for determining the significance of all variables except three. A selected population of 78 persistors and 93 non-persistors was used to determine the significance of High School Grade Point Average, High Mathematics (units), and High School Science (units). This reduction of the population was necessitated by the presence of 37 students who were admitted on the basis of General Education Development (GED) and an additional 16 for whom high school records were not available at the institution at which they were enrolled.

Selection of Variables

Each of the institutions enrolling students in ADP were contacted by mail in December, 1972, and asked to supply information concerning their admission procedure and a sample copy of their admission forms. A copy of this letter is included in Appendix B. From the information received by return mail, the following variables were selected for study:

1. Sex
2. Age
3. Marital status
4. Number of children
5. ACT scores -- English

Mathematics

Social Studies

Natural Sciences

Composite

6. High School Grade Point Average (4-point scale)
7. High School Science (units)
8. High School Mathematics (units)
9. Previous college (semester credit hours)
10. Previous nursing education (definition Chapter I)
11. Previous nursing employment (definition Chapter I)

Instruments

No special instruments were designed or employed for gathering data. Completed admissions forms and other local information were used as the sources of information of the selected variables.

Data Collection

In the fall of 1973, letters were sent to the administrations of the designated institutions, explaining the basic components of the research study. The assurance of maintaining confidentiality was given and a request made to have access to individual student records. A copy of this letter is included in Appendix B. The responses were favorable, and the writer visited campuses during February of 1974. Because Tulsa Junior College has devised a computerized student information bank, the information from that institution was retrieved by their own personnel and returned by mail.

Data Analysis

Statistical techniques were used to provide information regarding each of the variables. Means provide a graphic contrast between local institutions and statewide totals. The Chi Square statistical analysis was deemed most appropriate for the variables reported as nominal data; namely, sex and marital status. The t test using either the separate or pooled variance formula was deemed appropriate for variables reported as ordinal data.

Hypotheses

HO₁: There is no significant difference in the age of persistors as compared to non-persistors.

HO₂: There is no significant difference in the proportion of men to women who persisted as compared to the proportion of men to women who entered.

- HO₃: There is no significant difference in the proportion of married to nonmarried students who persisted as compared to the proportion of married to nonmarried students who entered the program.
- HO₄: There is no significant difference in the number of children of persistors as compared to non-persistors.
- HO₅: There is no significant difference in the ACT Scores (English, Mathematics, Social Studies, Natural Sciences, and Composite) of persistors as compared to non-persistors.
- HO₆: There is no significant difference in the High School Grade Point Average of persistors as compared to non-persistors.
- HO₇: There is no significant difference in the number of units of high school science completed by persistors as compared to non-persistors.
- HO₈: There is no significant difference in the number of units of high school mathematics completed by persistors as compared to non-persistors.
- HO₉: There is no significant difference in the number of semester credit hours previously earned by persistors as compared to non-persistors.
- HO₁₀: There is no significant difference in the months of previous nursing education experienced by persistors as compared to non-persistors.
- HO₁₁: There is no significant difference in the years of previous nursing employment completed by persistors as compared to non-persistors.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Introduction

This study was designed to determine whether significant differences do exist between the two groups of Associate Degree Nursing students. A Persistor (P) is defined as a student who was admitted to the Associate Degree Nursing Program during the fall of 1971 and continued with the same group to graduation during the spring of 1973. A Non-Persistor (NP) is defined as a student who was admitted to the Associate Degree Nursing Program during the fall of 1971 and did not continue with the same group to graduation during the spring of 1973. The information was collected from the institutional and departmental records after the graduation of the groups.

Results of Statistical Analysis of Data

Pertaining to Hypotheses

Results of statistical analyses are presented in this chapter. Each hypothesis is stated and the statistical analysis follows. A descriptive report of data pertinent to each of the variables is included. The design of the descriptive report is intended to display the contrast between local institutions and statewide means. The .05 level of significance was selected as the level which must be attained before the investigator would reject a null hypothesis. Therefore,

conclusions in this study were based on the .05 significance level.

HO₁: There is no significant difference in the age of persistors as compared to non-persistors.

Data shown in Table I compared the mean and S.D. of the age variable for both the P and NP groups; Figure 1 displays the differences between the age (mean) at the six institutions and statewide. The statewide mean of the P group is 28.600 and of the NP group is 23.596.

t test = 4.282 p < .01 HO₁ Rejected

HO₂: There is no significant difference in the proportion of men to women who persisted as compared to the proportion of men to women who entered.

As indicated earlier the enrollment of males constituted a very small percentage of the total enrollment in the Associate Degree Program (ADP). This study group included only 15 men who enrolled in the fall of 1971; of these, only five are included in the P group.

$$\chi^2 = \frac{(5-7.359)^2}{7.359} + \frac{(105-102.663)^2}{102.663} = .756 + .053 = .809 \quad p < .3 \quad \text{n.s.}$$

HO₂ Accepted

HO₃: There is no significant difference in the proportion of married to nonmarried students who persisted as compared to the proportion of married to nonmarried students who entered the program.

The number of married students who persisted is reported as 66, or 60 percent, as compared to 44, or 40 percent, who were nonmarried. The number of married students who did not persist is computed as 41; the number of nonmarried students who did not persist is listed as 73.

$$\chi^2 = \frac{(66-52.470)^2}{52.470} + \frac{(44-57.420)^2}{57.420} = 3.488 + 3.136 = 6.625 \quad p < .05$$

HO₃: Rejected

TABLE I
AGE OF STUDENTS

Institution	Group	Sample Size	Age	
			Mean	S.D.
A	Persistor	23	27.96	9.48
A	Non-Persistor	17	22.76	9.15
B	Persistor	16	27.94	8.42
B	Non-Persistor	29	22.83	7.24
C	Persistor	23	27.26	10.65
C	Non-Persistor	13	21.61	5.41
D	Persistor	18	32.22	11.11
D	Non-Persistor	11	28.00	10.09
E	Persistor	16	28.25	7.58
E	Non-Persistor	31	22.19	6.66
F	Persistor	14	28.36	8.48
F	Non-Persistor	13	28.00	9.20
Statewide	Persistor	110	28.60	9.45
Statewide	Non-Persistor	114	23.59	7.94

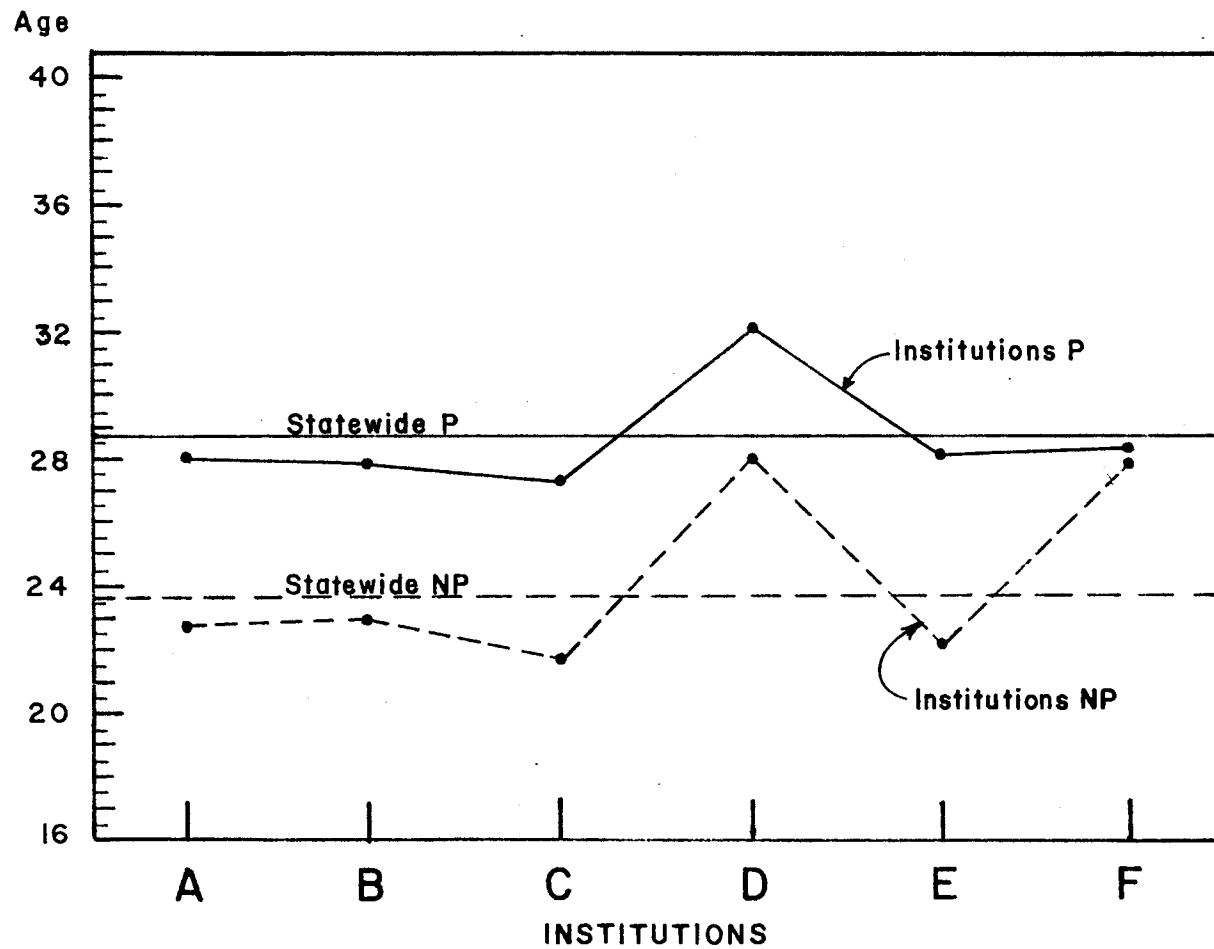


Figure 1. Comparison of the Age (Mean) of Persistors and Non-Persistors at Six Institutions and Statewide

HO₄: There is no significant difference in the number of children of persistors as compared to non-persistors.

Data shown in Table II compares the mean and S.D. of the number of children variable for both the P and NP groups; Figure 2 displays the means for six institutions and statewide.

t test (separate variance formula) = 3.874 p < .01

HO₄ Rejected

HO₅: There is no significant difference in the ACT scores (English, Mathematics, Social Studies, Natural Sciences, and Composite) of persistors as compared to non-persistors.

The means and S.D. for these variables are included in Table III, and Figures 3, 4, 5, 6, and 7 display the contrast of scores (mean) for the six institutions and statewide. Applying the t test of significance, the results on the various components are as follows:

English t test (Pooled variance formula) = 1.721 p > .05 Accept

Mathematics t test (Pooled variance formula) = 0.772 p > .05
Accept

Social Studies t test (Pooled variance formula) = 2.827 p < .01
Reject

Natural Sciences t test (Pooled variance formula) = 1.953 p > .05
Accept

Composite t test (Pooled variance formula) = 2.069 p < .05 Reject

The statewide means of the various components are as follows:

	<u>Persistors</u>	<u>Non-Persistors</u>
English	18.318	17.368
Mathematics	14.218	14.754
Social Studies	17.800	15.605
Natural Sciences	19.173	17.859
Composite	17.527	16.500

TABLE II
NUMBER OF CHILDREN

Institution	Group	Sample Size	Number of Children	
			Mean	S.D.
A	Persistor	23	1.39	1.44
A	Non-Persistor	17	0.76	1.30
B	Persistor	16	1.62	1.82
B	Non-Persistor	29	0.76	1.76
C	Persistor	23	1.30	1.55
C	Non-Persistor	13	0.54	1.05
D	Persistor	18	1.72	1.60
D	Non-Persistor	11	1.45	1.57
E	Persistor	16	1.75	1.77
E	Non-Persistor	31	0.58	1.34
F	Persistor	14	2.21	2.58
F	Non-Persistor	13	1.07	1.19
Statewide	Persistor	110	1.61	1.75
Statewide	Non-Persistor	114	0.79	1.43

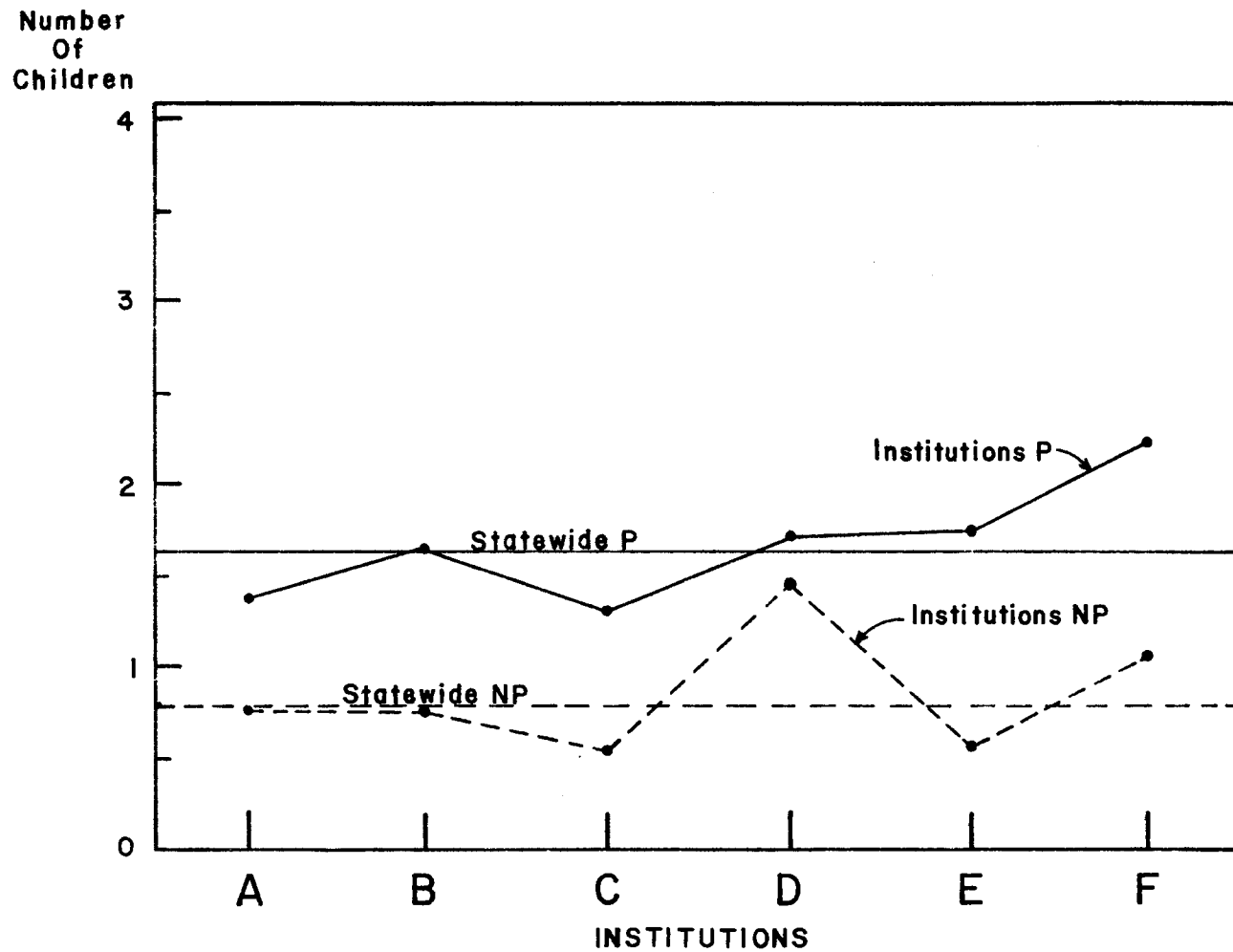


Figure 2. Comparison of the Number of Children (Mean) of Persistors and Non-Persistors at Six Institutions and Statewide

TABLE III

ACT SCORES (ENGLISH, MATHEMATICS, SOCIAL STUDIES, NATURAL
SCIENCES, AND COMPOSITE)

Institution	Group	Sample Size	English		Mathematics		Social Studies		Natural Sciences		Composite	
			Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
A	P	23	18.00	2.97	13.61	4.72	17.52	4.84	21.28	8.38	17.26	2.26
A	NP	17	18.58	3.67	15.58	4.78	17.06	4.31	19.35	4.27	17.71	3.75
B	P	16	17.13	5.65	14.81	7.86	16.44	6.22	18.19	4.35	16.62	5.23
B	NP	29	17.38	3.29	13.17	3.55	14.76	4.47	15.62	3.75	15.28	2.49
C	P	23	17.96	4.14	14.26	4.74	19.26	5.35	19.73	5.06	18.21	2.75
C	NP	13	17.54	3.59	16.38	4.11	15.92	3.73	19.77	4.58	17.46	1.85
D	P	18	19.33	3.48	14.94	5.09	17.11	7.77	18.72	7.09	17.66	4.89
D	NP	11	12.82	4.97	11.81	6.52	11.73	4.67	15.54	3.50	13.45	3.33
E	P	16	17.94	4.09	13.56	6.28	16.81	8.18	17.69	6.25	16.50	4.63
E	NP	31	18.39	4.44	16.77	4.04	16.35	6.86	18.74	5.17	17.61	3.91
F	P	14	19.93	3.95	14.28	6.58	19.43	4.48	21.50	4.76	18.86	3.96
F	NP	13	16.23	5.18	13.23	4.54	16.77	5.90	18.85	5.56	16.62	3.40
Statewide	P	110	18.32	4.06	14.22	5.70	17.80	6.18	19.17	5.29	17.52	3.94
Statewide	NP	114	17.37	4.20	14.75	4.67	15.60	5.43	17.85	4.76	16.50	3.48

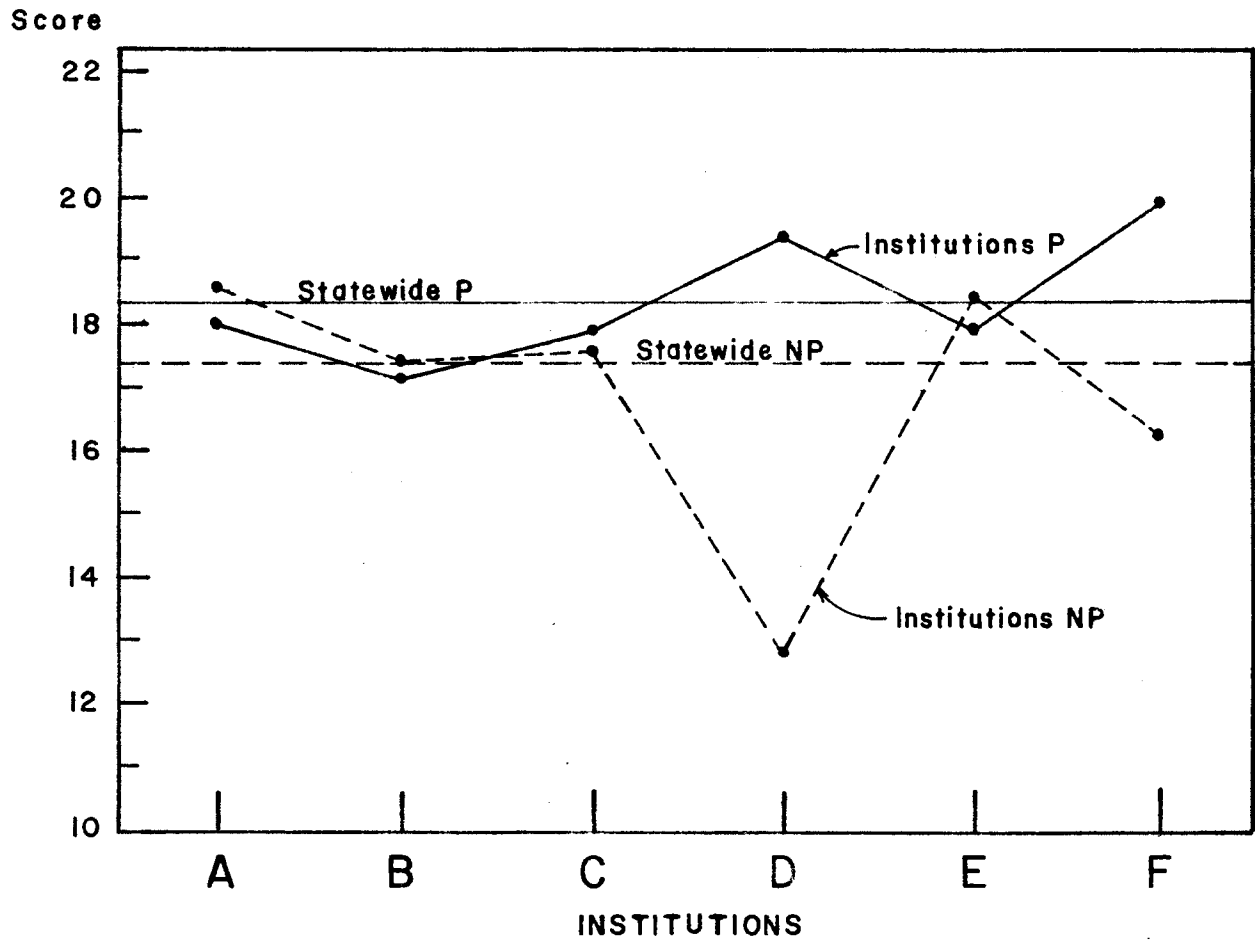


Figure 3. Comparison of the ACT Score, English, (Mean) of Persistors and Non-Persistors at Six Institutions and Statewide

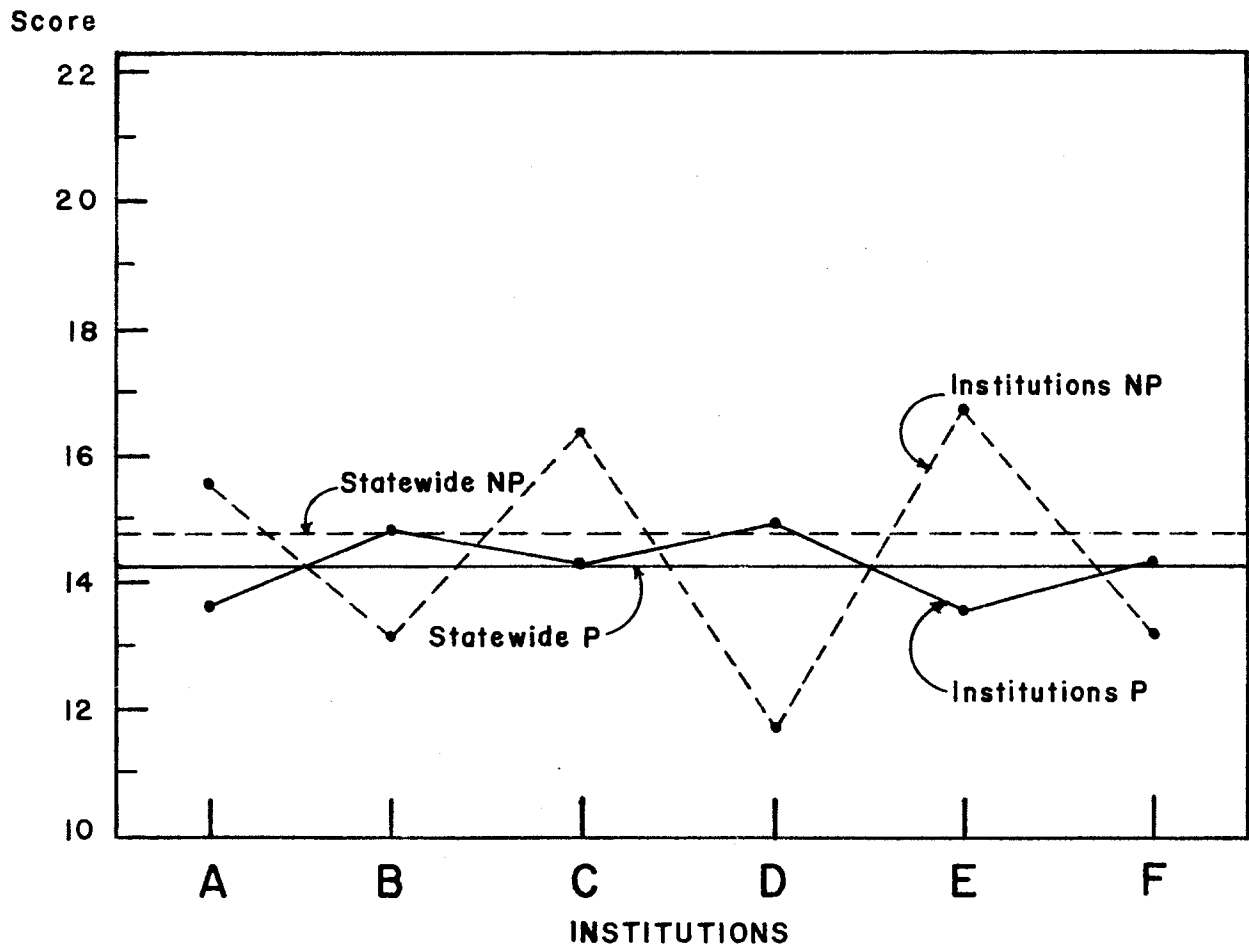


Figure 4. Comparison of the ACT Score, Mathematics, (Mean) of Persistors and Non-Persistors at Six Institutions and Statewide

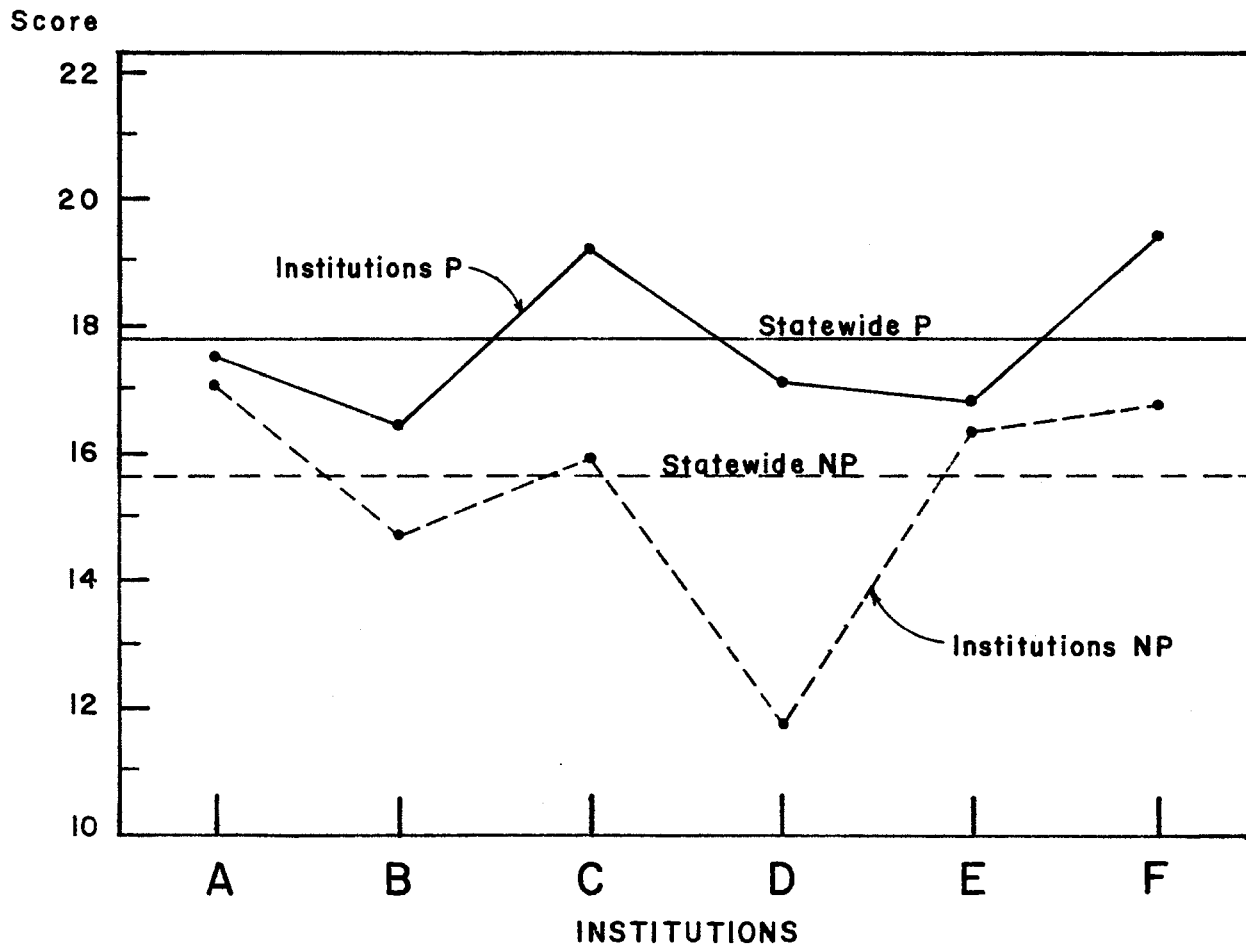


Figure 5. Comparison of the ACT Score, Social Studies, (Mean) of Persistors and Non-Persistors at Six Institutions and Statewide

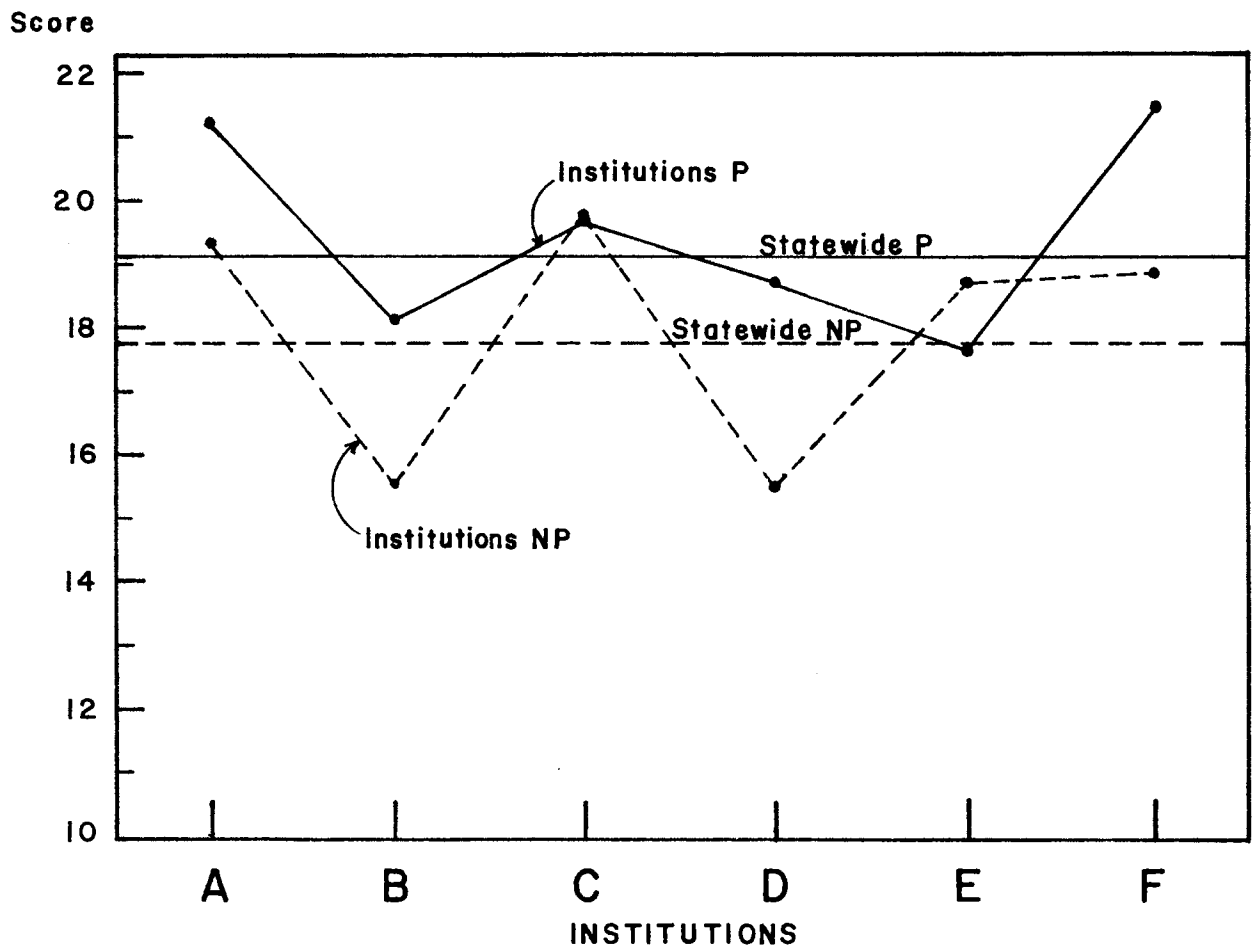


Figure 6. Comparison of the ACT Score, Natural Sciences, (Mean) of Persistors and Non-Persistors at Six Institutions and Statewide

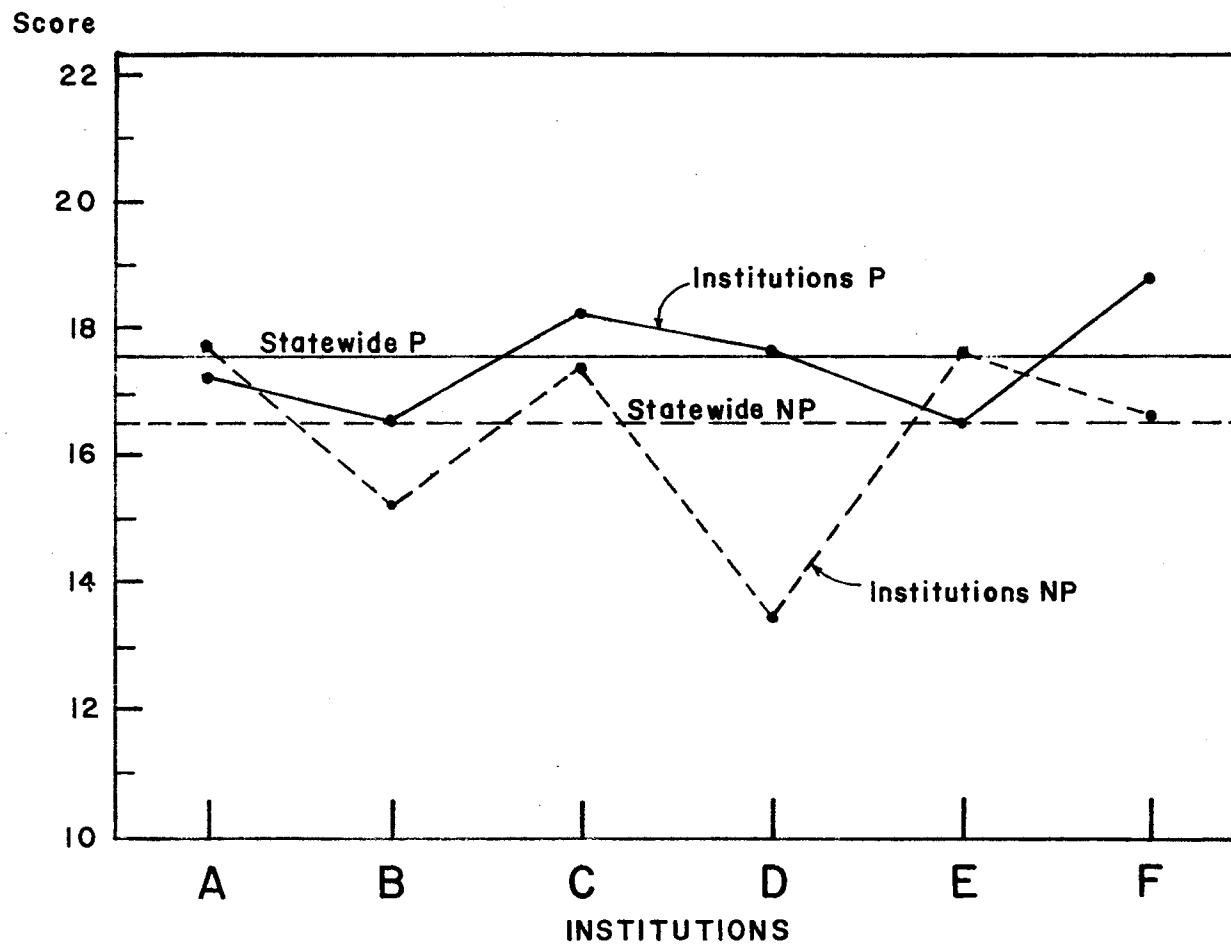


Figure 7. Comparison of the ACT Score, Composite, (Mean) of Persistors and Non-Persistors at Six Institutions and Statewide

HO₆: There is no significant difference in the High School Grade Point Average (HSGPA) of persistors as compared to non-persistors.

The findings reported in Table IV relate to HSGPA. Figure 8 displays the contrast of the means for this variable at the local institutions and statewide. The statewide mean for persistors is 2.981 and for the non-persistors it is 2.702.

t test (pooled variance formula) = 3.057 p < .01

HO₆ Rejected

HO₇: There is no significant difference in the number of units of high school science completed by persistors as compared to non-persistors.

Data in Table IV is related to this variable. Figure 9 contrasts the means of the number of units of high school science as determined at the local institutions and statewide. The statewide mean for persistors is 3.987 and for non-persistors it is 4.408.

t test (pooled variance formula) = 1.732 p > .05

HO₇ Accepted

HO₈: There is no significant difference in the number of units of high school mathematics completed by persistors as compared to non-persistors.

Table IV reports the means and S.D. of this variable, while Figure 10 displays the means of the local institutions and the statewide compilations. The statewide mean for persistors is 3.577 and for non-persistors is 4.204.

t test (pooled variance formula) = 2.353 p < .05

HO₈ Rejected

TABLE IV
HIGH SCHOOL GRADE POINT AVERAGE, MATHEMATICS (UNITS) AND SCIENCE (UNITS)

Institution	Group	Sample Size	Grade Point Average		Mathematics		Science	
			Mean	S.D.	Mean	S.D.	Mean	S.D.
A	Persistor	20	2.85	0.65	3.80	1.70	3.60	2.01
A	Non-Persistor	15	2.76	0.64	4.33	1.40	5.00	1.81
B	Persistor	9	3.27	0.58	5.22	0.83	4.22	1.48
B	Non-Persistor	26	2.72	0.45	4.15	1.69	3.92	1.52
C	Persistor	12	3.20	0.66	4.00	1.48	5.14	1.99
C	Non-Persistor	4	2.87	0.09	6.00	1.63	6.00	0.00
D	Persistor	18	3.11	0.72	4.33	1.67	2.83	1.33
D	Non-Persistor	8	2.75	0.80	4.00	1.07	4.00	1.51
E	Persistor	14	2.76	0.74	3.71	0.73	3.43	1.99
E	Non-Persistor	28	2.62	0.44	4.92	1.49	3.71	1.78
F	Persistor	11	2.89	0.47	3.27	1.85	3.36	1.57
F	Non-Persistor	12	2.70	0.73	3.58	1.97	4.50	1.51
Statewide	Persistor	78	2.98	0.66	3.99	1.52	3.58	1.74
Statewide	Non-Persistor	93	2.70	0.54	4.41	1.64	4.20	1.69

NOTE: One unit is equivalent to completion of one semester.

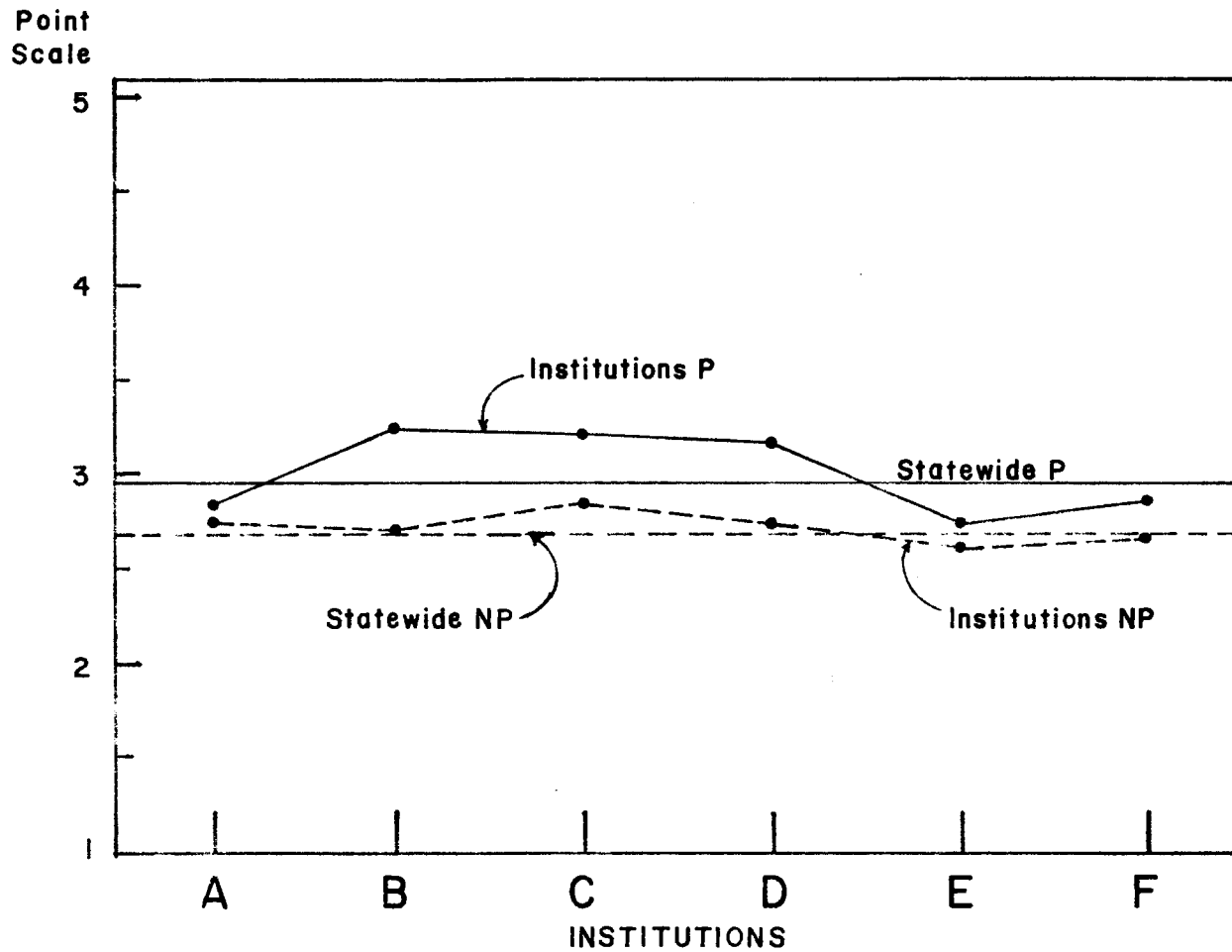


Figure 8. Comparison of the High School Grade Point Average (Mean) of Persistors and Non-Persistors at Six Institutions and Statewide

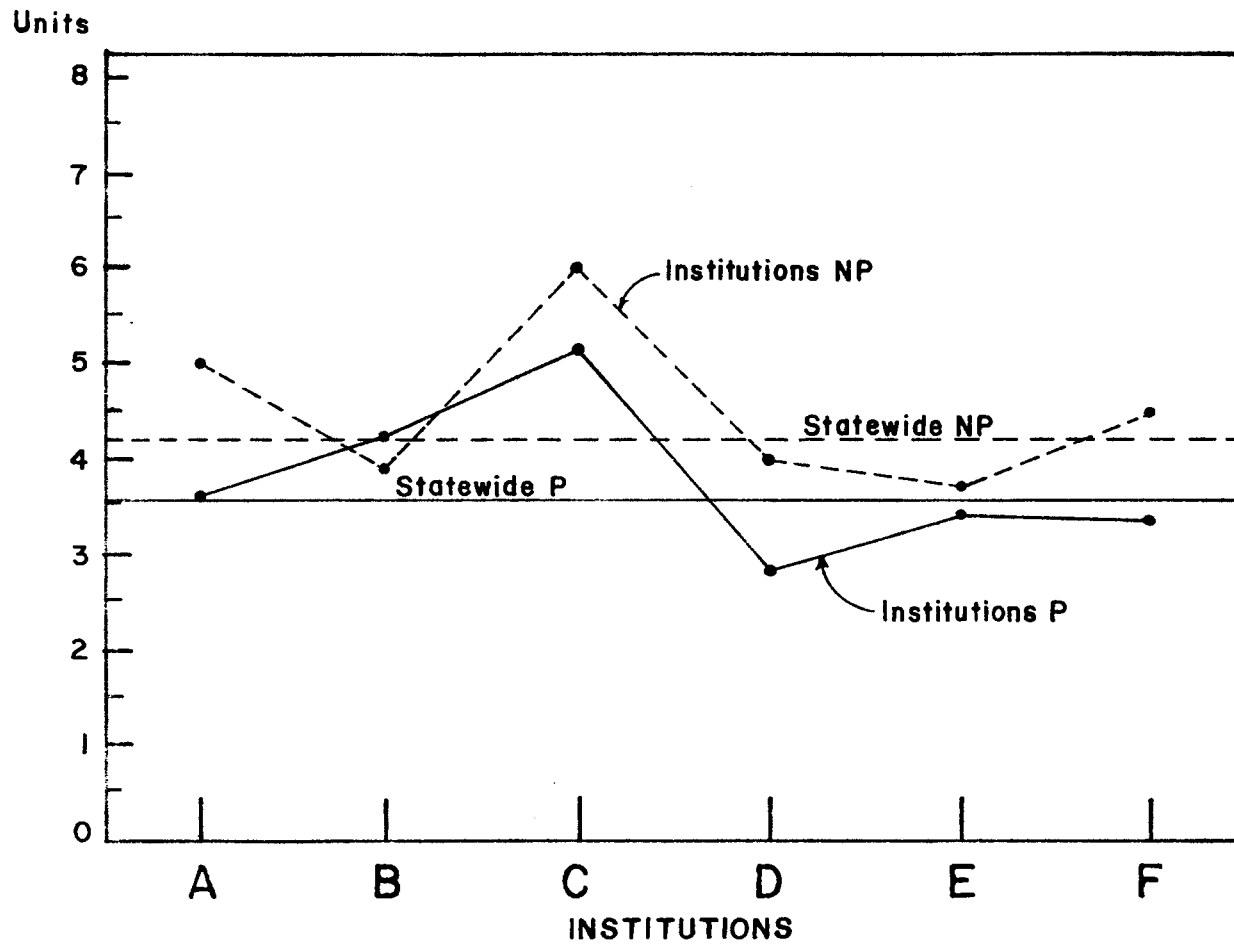


Figure 9. Comparison of the High School Science (Units-Mean) of Persistors and Non-Persistors at Six Institutions and Statewide

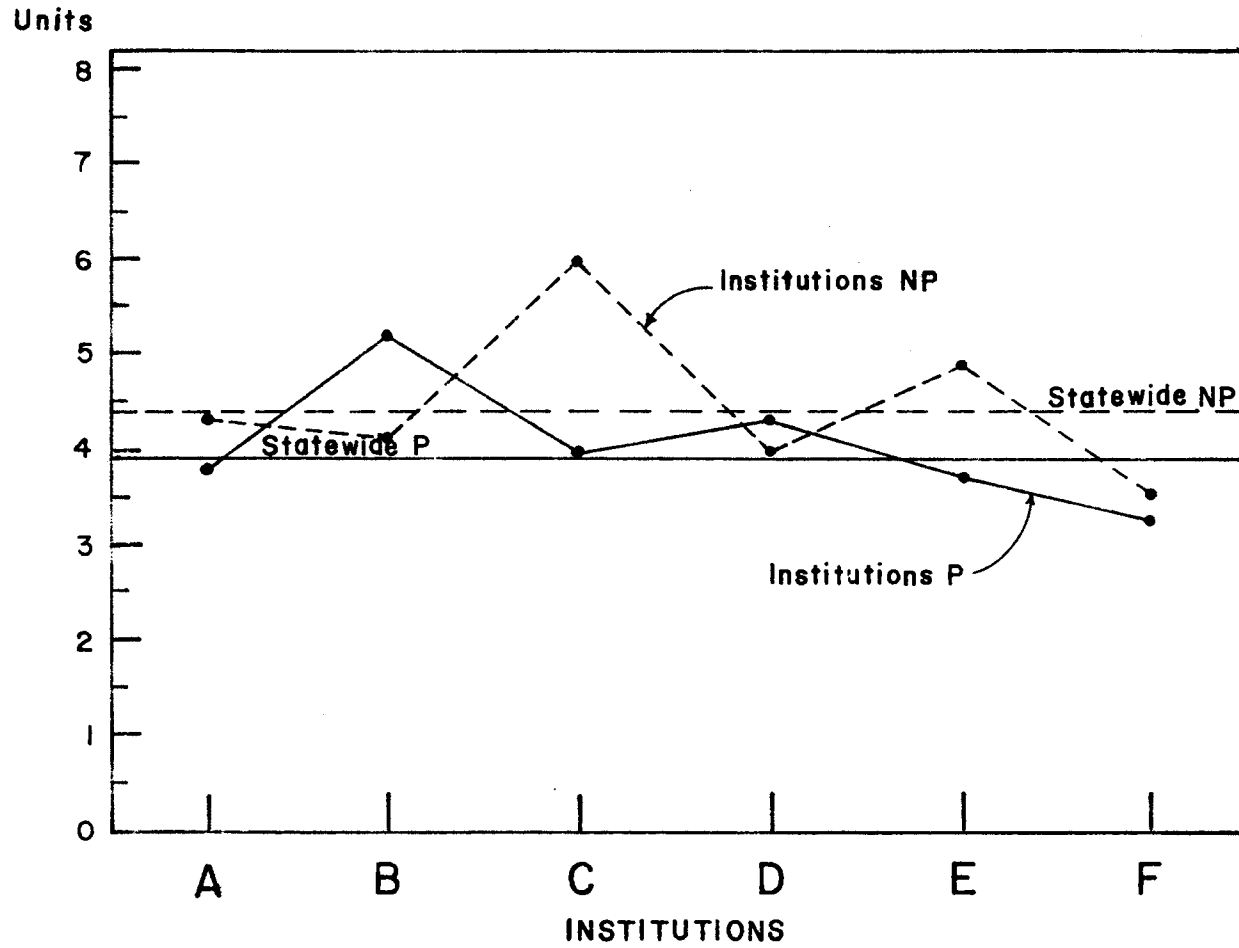


Figure 10. Comparison of the High School Mathematics (Units-Mean) of Persisters and Non-Persisters at Six Institutions and Statewide

HO₉: There is no significant difference in the number of semester credit hours previously earned by persistors as compared to non-persistors.

Data included in Table V relate to this variable, and Figure 11 shows the differences between the means at the local and statewide levels. The statewide mean is 19.382 for the P group and 18.219 for the NP group.

t test (pooled variance formula) = .404 p > .05

HO₉ Accepted

HO₁₀: There is no significant difference in the months of previous nursing education experienced by persistors as compared to non-persistors.

Note: For purposes of this study, Previous Nursing Education is defined as:

1. Completion of a prescribed course of instruction of vocational nursing leading to eligibility for state board licensure examination, and/or
2. Enrollment in an established school or nursing. This enrollment interval shall have included courses with designated nursing content.

Table VI includes data that relates to this variable, and Figure 12 contrasts the means of the previous nursing education at the local and statewide levels.

The statewide mean for the P groups is 2.582 and for the NP group it is 0.430.

t test (separate variance formula) = 3.966 p < .01

HO₁₀ Rejected

TABLE V
PREVIOUS COLLEGE SEMESTER CREDIT HOURS

Institution	Group	Sample Size	Previous Credit Hours	
			Mean	S.D.
A	Persistors	23	25.26	21.54
A	Non-Persistors	17	11.65	17.49
B	Persistors	16	14.31	15.65
B	Non-Persistors	29	21.00	26.29
C	Persistors	23	11.52	15.04
C	Non-Persistors	13	17.00	21.07
D	Persistors	18	30.55	7.79
D	Non-Persistors	11	36.64	14.80
E	Persistors	16	19.81	31.84
E	Non-Persistors	31	12.74	22.28
F	Persistors	14	13.50	17.73
F	Non-Persistors	13	19.31	22.51
Statewide	Persistors	110	19.38	20.22
Statewide	Non-Persistors	114	18.22	22.73

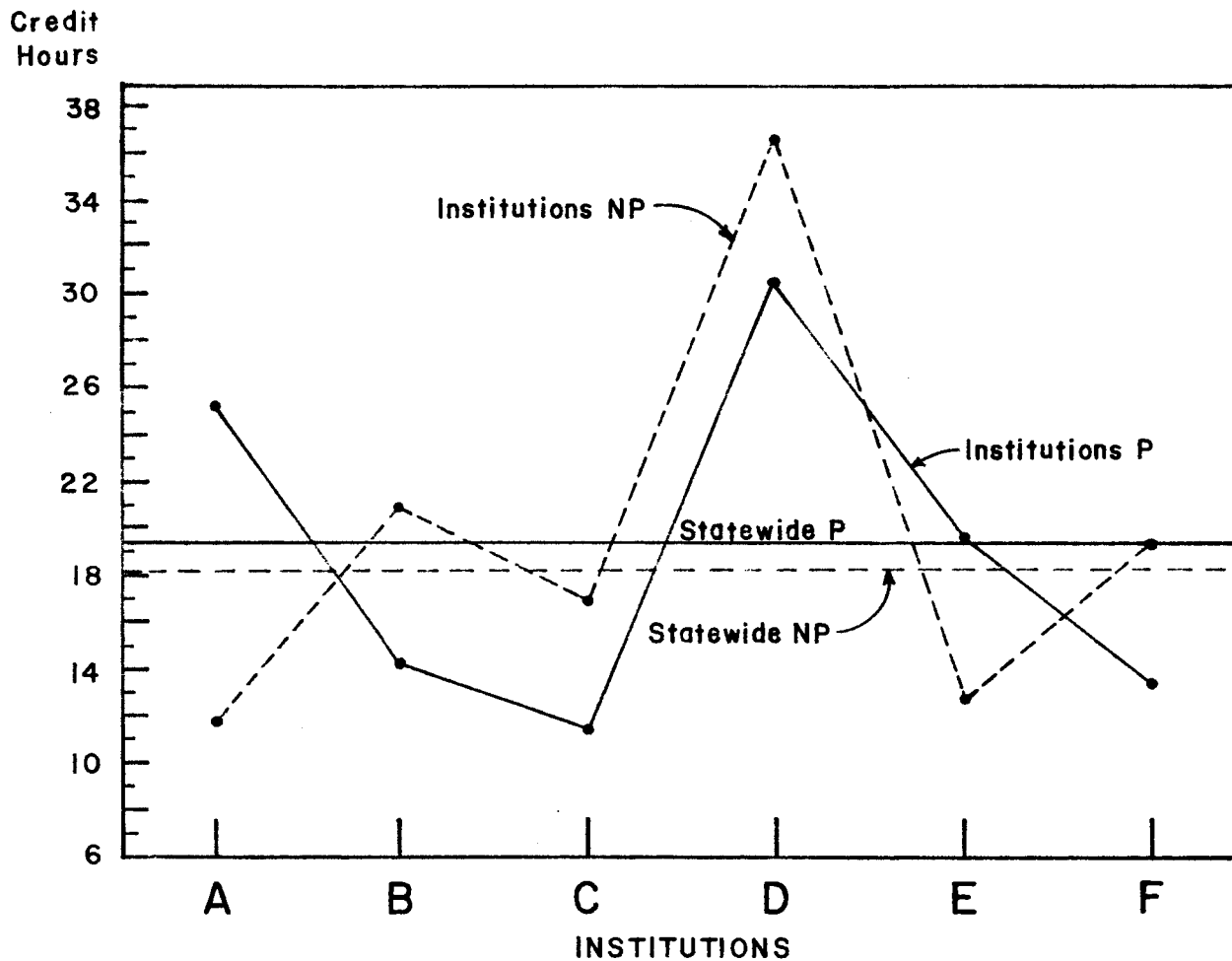


Figure 11. Comparison of the Previous College Semester Credit Hours (Mean) of Persistors and Non-Persistors at Six Institutions and Statewide

TABLE VI

PREVIOUS NURSING EDUCATION AND PREVIOUS NURSING EMPLOYMENT

Institution	Group	Sample Size	Previous Nursing Education (Months)		Previous Nursing Employment (Years)	
			Mean	S.D.	Mean	S.D.
A	Persistors	23	1.96	6.11	2.80	4.15
A	Non-Persistors	17	0.00	0.00	0.65	1.23
B	Persistors	16	1.50	4.10	2.00	2.90
B	Non-Persistors	29	0.07	0.37	0.60	1.59
C	Persistors	23	3.65	5.64	1.61	2.71
C	Non-Persistors	13	0.00	0.00	0.00	0.00
D	Persistors	18	3.83	6.16	4.50	5.99
D	Non-Persistors	11	1.09	3.61	2.92	4.92
E	Persistors	16	2.25	4.84	1.39	1.92
E	Non-Persistors	31	0.58	2.38	0.79	1.69
F	Persistors	14	1.86	4.33	1.82	2.81
F	Non-Persistors	13	1.31	3.30	1.65	2.73
Statewide	Persistors	110	2.58	5.34	2.38	3.78
Statewide	Non-Persistors	114	0.43	2.02	0.93	2.26

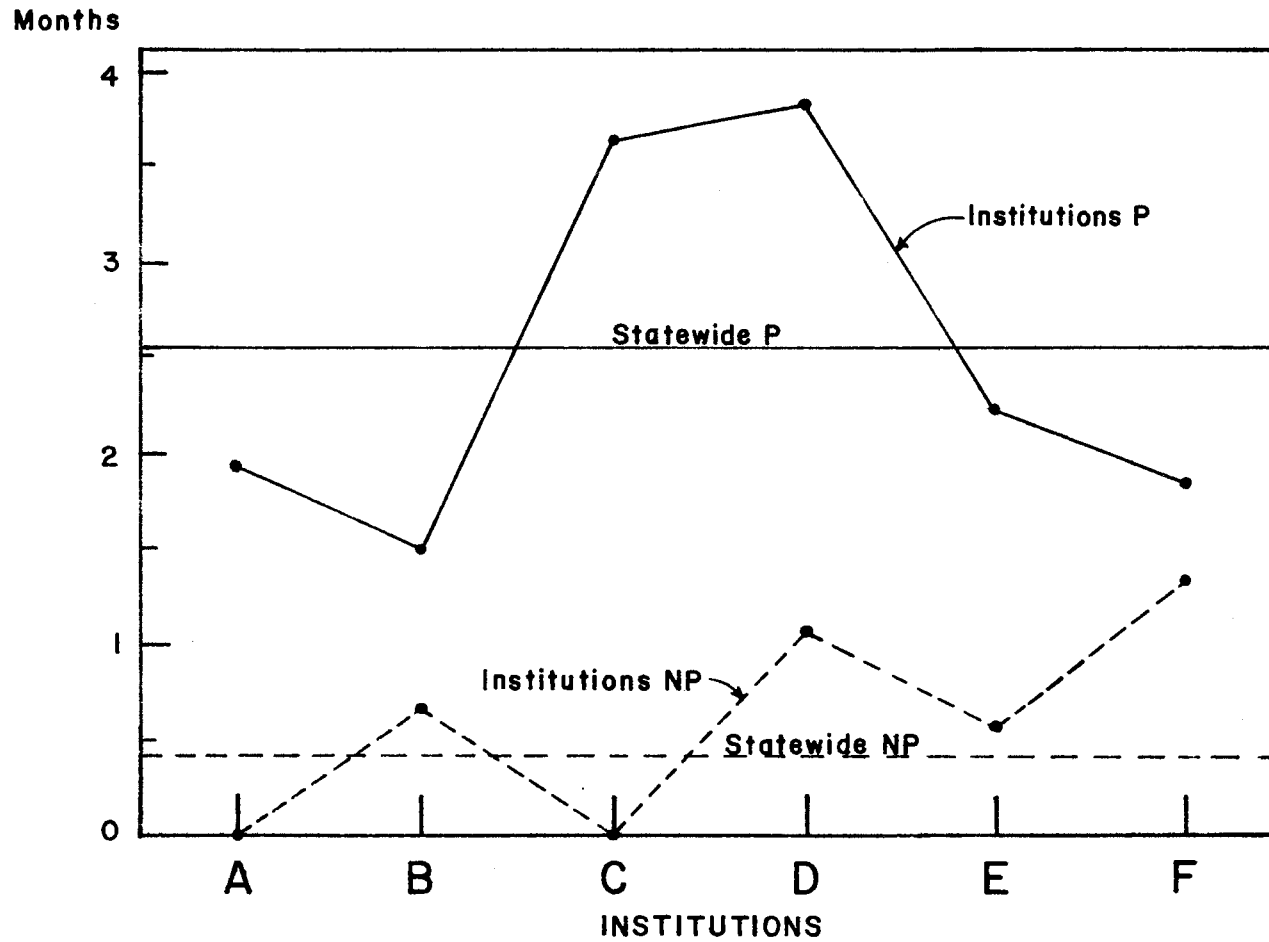


Figure 12. Comparison of the Months of Previous Nursing Education (Mean) of Persistors and Non-Persistors at Six Institutions and Statewide

HO₁₁: There is no significant difference in the years of previous nursing employment completed by persistors as compared to non-persistors.

Note: For purposes of this study, Previous Nursing Employment is defined as: Paid employment for service in a nursing capacity, with a title such as Licensed Practical Nurse, nurse assistant, nurse aide, office nurse, orderly, military medic, or nurse.

Table VI includes data relating to this variable, and Figure 13 reports the means at the local and statewide levels. The statewide mean for the P group is 2.384 and for the NP group is .935.

t test (separate variance formula) = 3.465 p < .01

HO₁₁ Rejected

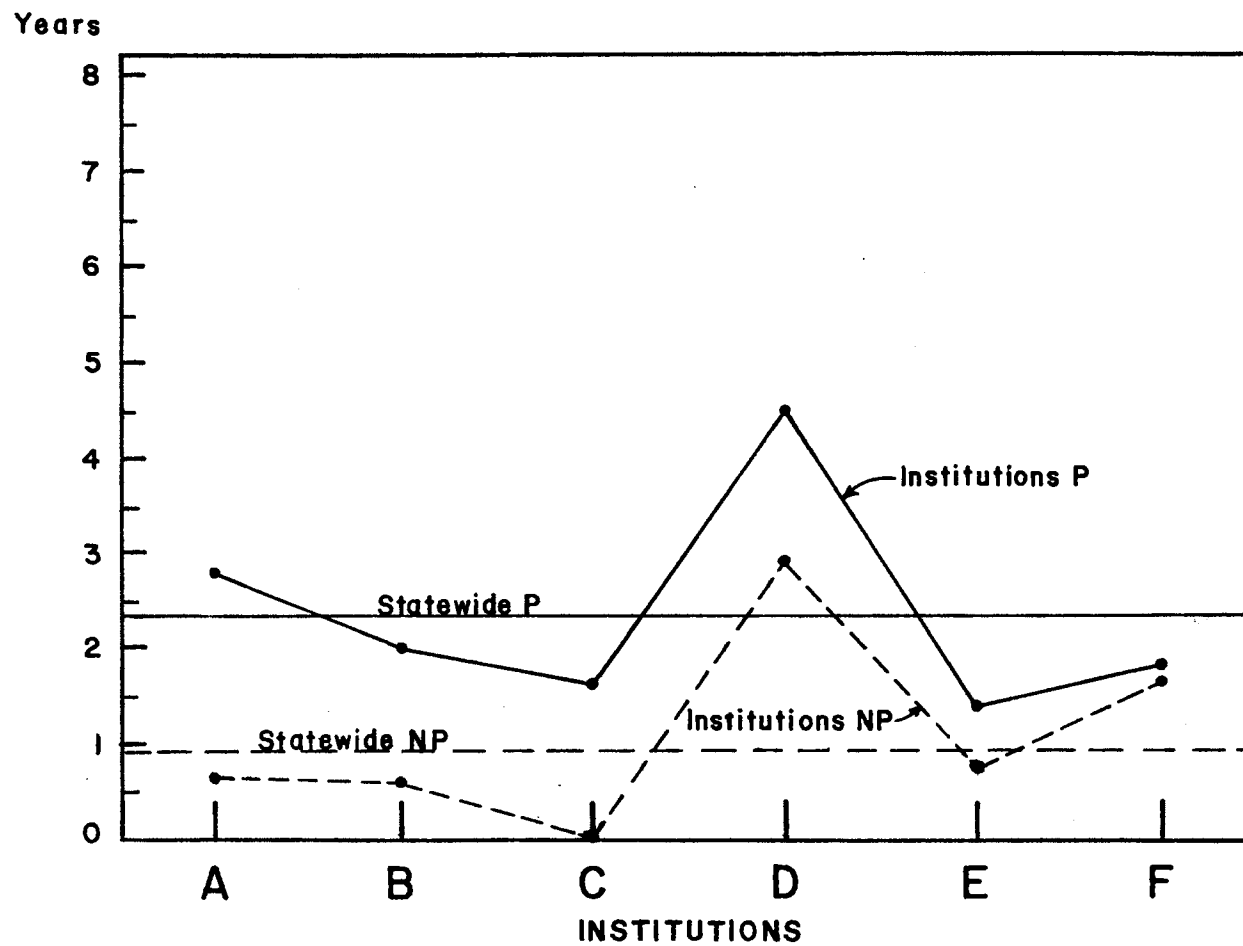


Figure 13. Comparison of the Years of Previous Nursing Employment (Mean) of Persistors at Six Institutions and Statewide

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This study was primarily concerned with the high attrition rate found in two year professional nursing schools. The problem is nationwide; however, this study was limited to the state of Oklahoma. It was designed to study certain selected variables and their relationship to persistors and non-persistors. The data was obtained from admission information and related to subsequent attrition or graduation. The design of the study was "Ex Post Facto."

Some previous studies have concerned themselves with the relationship between achievement test scores and "success" in nursing education, whereas other studies have related "success" and personality factors. The National League of Nursing has devised a Pre-Nursing and Guidance test that establishes some predictive qualities. The "nursing" factor has been an interest of many researchers but it remains difficult to measure or predict.

Although based on the "Ex Post Facto" design, the information included in this study could provide information useful in other research.

Findings

The disposition of the null hypothesis is included in Table VII. The findings of the study indicate a significant difference in ages of

TABLE VII

THE ACCEPTANCE OR REJECTION OF NULL HYPOTHESES* REGARDING THE COMPARISON OF
PERSISTORS AND NON-PERSISTORS IN RELATION TO SELECTED VARIABLES

Hypothesis	Disposition
HO ₁ : There is no significant difference in the age of persistors as compared to non-persistors.	REJECTED
HO ₂ : There is no significant difference in the proportion of men to women who persisted as compared to the proportion of men to women who entered.	ACCEPTED
HO ₃ : There is no significant difference in the proportion of married to nonmarried students who persisted as compared to the proportion of married to nonmarried students who entered the program.	REJECTED
HO ₄ : There is no significant difference in the number of children of persistors as compared to non-persistors.	REJECTED
HO ₅ : There is no significant difference in the ACT scores of persistors as compared to non-persistors.	ACCEPTED
English Mathematics Social Studies Natural Sciences Composite	ACCEPTED
Social Studies	REJECTED
Natural Sciences	ACCEPTED
Composite	REJECTED
HO ₆ : There is no significant difference in the High School Grade Point Average of persistors as compared to non-persistors.	REJECTED
HO ₇ : There is no significant difference in the number of units of high school science completed by persistors as compared to non-persistors.	ACCEPTED

TABLE VII-- (CONTINUED)

Hypothesis	Disposition
HO ₈ : There is no significant difference in the units of high school mathematics completed by persistors as compared to non-persistors.	REJECTED
HO ₉ : There is no significant difference in the number of semester credit hours previously earned by persistors as compared to non-persistors.	ACCEPTED
HO ₁₀ : There is no significant difference in the months of previous nursing education experienced by persistors as compared to non-persistors.	REJECTED
HO ₁₁ : There is no significant difference in the years of previous nursing employment completed by persistors as compared to non-persistors.	REJECTED

*The .05 level of significance was selected as the level which must be attained before the investigator would reject a null hypothesis.

persistors and non-persistors. Although the age differential varied from less than one-half year to as much as five years among the six institutions, there was a consistent pattern indicating "persistors" were older. A test of the variables comparing the number of males to females enrolled in this type of nursing education failed to show any significantly different pattern. These data evidence no difference between the small number of males and large number of females at the time of enrollment or at the time of departure.

Testing of the variable relating number of children established significance, identifying more children among persistors than non-persistors. This factor relates logically to the percentage of married students. The significance tabulated between the married and nonmarried variables is not as vivid as the contrasts reflected in the total compilation. The contrast of the (1) 60 percent married, 40 percent nonmarried combination among persistors versus (2) 64 percent non-married, 36 percent married combination among non-persistors provides additional evidence in regard to this factor.

American College Testing (ACT) scores have been used as variables in a multitude of studies relating to "success" in educational experiences past high school. In this study the English, Mathematics, and Natural Sciences scores yielded no significant difference between persistors and non-persistors. The ACT scores of Social Studies and the Composite, as computed, were identified as yielding a significant difference between the two designated groups.

The variables relating to high school performance were established as significant in regard to grade point average and units of mathematics completed but not significant in relation to units of science completed.

Many studies have related academic success to high school achievement, particularly as portrayed by the grade point average. Among the students included in this study the mean number of units of high school mathematics and science completed were both greater for non-persistors than persistors. However, the significance of the differences was established only in relation to the units of high school mathematics. Analysis of the variables relating to high school, i.e., grade point average, units of mathematics and science, was based on a reduced population. This was due to the unavailability of information pertaining to a number of students. Included in the study were 37 students who were admitted on the basis of General Education Development (GED). This category was not included as a discrete variable but since these enrollees affected the sample size, it is noteworthy that 22 of these students were persistors as compared to 15 non-persistors.

It is also considered worthy of note that, prior to enrollment in a nursing course, many students comprising both persisting and non-persisting groups had completed a number of semester credit hours. On the average, the students of both groups had earned the equivalent of slightly more than the 16 hours normally attempted as a semester's enrollment. No significance was established through treatment of compiled differences.

Previous Nursing Education and Previous Nursing Employment were both established as significant variables. The calculated mean of the persistors and non-persistor groups did reveal a marked contrast. This particular pair of means, as reported for each of the six institutions, presented evidence of the problems cited by Kerlinger (1966) when defining the "Ex Post Facto" design of research. None of the students

making up the study population had access to the working definitions of this study with regard to Previous Nursing Education or Previous Nursing Employment prior to the time of their application to the nursing program. Since available records of many students did not reflect "Previous Nursing Education" or "Previous Nursing Employment," particularly students categorized as non-persistors, it is implied that applicants may not have supplied all the information that would be relevant to this study. Understandably, the greater influence on the calculated means was effected by the inclusion of the Licensed Practical Nurses who would have reported their 12-month training period and any previous or following nursing work experience.

Conclusions

Within the limits of this study, the following conclusions were posited:

1. Older married students with children are more likely to persist to graduation with the group.
2. Although the percentage of male student enrollees is small, they are as likely to succeed as female student enrollees.
3. Higher ACT scores are more likely to be found among persistors. The Social Studies and Composite scores are significantly higher among persistors.
4. Persistors have a significantly higher high school grade point average. Non-persistors have completed significantly greater numbers of units in high school mathematics than persistors. Generally, non-persistors will tend to have completed more units of high school science than persistors.

5. The number of college semester credit hours completed before admission into the nursing program does not appear to measurably influence attrition or graduation.

6. Previous nursing education and/or employment appear significantly beneficial to students in terms of their tendency to continue with the group toward graduation.

Recommendations

Although the results of this study indicate the more likely "success" of the older student, this finding should not be misconstrued as validity for the admission of only older students. Likewise, the married student with children is determined as more likely to succeed to graduation with the group. Selection of students based solely on these criteria would tend to discriminate against the individual student who happens to be younger, nonmarried, and without children. It would seem well to point out that the study population includes many persistors who were younger, nonmarried, and without children.

It is generally established that ACT scores are now to be accepted as reliable predictors of academic success in post secondary learning situations. The use of the reported means as a sharp delineation between "likely-to-succeed" and "not-so-likely-to-succeed" candidates would be in conflict with the purposes of this study. Individual students with rather low ACT scores are included in the persistor group, and there are individual students with high ACT scores included among the non-persistors.

Although the high school grade point average is higher among the persistors than the non-persistors, the mean still represents less than

a "B" average (4 point scale). High school mathematics and science have long been recommended for inclusion in the secondary preparation for nurses training. However, considering the significance established by the higher ACT score in Social Studies among the persistors, it would appear that students interested in enrolling in Associate Degree Nursing Education should receive more emphasis on the Social Studies at the high school level.

Both persistors and non-persistor groups had achieved a mean of college semester credit hours that is equivalent to more than the average semester credit hour enrollment. This information may elicit several responses, including the possibility that this variable may have been a selection criterion. Presumably students who have already completed a portion of their general education requirements should be able to enroll in fewer hours per semester, and this might promote more diligence in completing courses. Therefore, selection of these students could be practiced under the assumption that this may well promote more satisfactory completion of required nursing courses.

Final consideration is given to the variables relating to previous nursing education and employment. This study was limited to a selected group of students who were enrolled during the interval of 1971-73 school years. However, the findings do indicate a significant trend. Admission procedures should seek some information regarding the students' opinions, attitudes, and expectations regarding "nursing." Although there are other various means of assessing an applicant's impression of what nursing "is" and "is not," questions seeking information about previous nursing education and/or employment are one means by which to solicit quantifiable information. Great caution must be used if

previous nursing education and/or employment are to be used as admission criteria. The exclusive use of these criteria would tend to discriminate against the individual student who has not had the opportunity to enter any other nursing program or be employed in a nursing capacity. Furthermore, the ranks of the non-persistors of this study include Licensed Practical Nurses, who may well have had ample opportunity to establish their personalized convictions about what nursing "is."

Recommendations for Future Studies

The results of this study are applicable to the selected group of students enrolled in the professional nursing education programs offered in the six selected institutions in the state of Oklahoma during the 1971-73 school years. The "Ex Post Facto" design of this study has been described as a limiting factor; future studies could utilize experimental research designs. The use of control groups, comprised of randomized samples, would allow predictive conclusions. Future studies might include such demographic criteria as urban versus metropolitan residency before and during the nursing education interval. Socio-economic factors such as family income, educational level, and father's occupation could provide valuable information. Further investigation of the Social Studies variable could include number of high school units completed as well as continued research of the ACT scores (Social Studies) significance established in this study.

Of additional concern in years to come will be studies that measure the influence upon occupational choice. Educational programs such as the Health Services Career Programs are now being offered at selected

high schools and area vocational-technical schools across the state. Such programs may become important influences upon occupation selection and significant variables in future studies relating to persisting and non-persisting students in nursing education in Oklahoma.

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APPENDIX A

BACONE COLLEGE
Bacone, Oklahoma

ASSOCIATE DEGREE NURSING

		Credit Hours
First Semester		
1113	English Composition I	3
2424	Anatomy and Physiology	4
1212	The Life of Christ	2
1106	Fundamentals of Nursing	6
1011	Physical Education Activity	<u>1</u>
		16 hours
Second Semester		
1213	English Composition II	3
2333	Microbiology	3
1113	General Psychology	3
1216	Physical and Mental Illness I	6
1111	Physical Education Activity	<u>1</u>
		16 hours
Summer		
1246	Physical and Mental Illness II	6
Third Semester		
1364	General Chemistry I	4
2483 or 2393	American History	3
2113	Social Problems	3
2366	Maternal-Child Health Nursing	<u>6</u>
		16 hours
Fourth Semester		
2013	American Government	3
2233	Christian Ethics	3
2378	Physical and Mental Illness III	8
3883	Nursing Seminar	<u>3</u>
		17 hours
	TOTAL HOURS	71 hours

CAMERON COLLEGE
Lawton, Oklahoma

ASSOCIATE DEGREE NURSING

		Credit Hours
First Semester		
1124	Physiology	4
1043	Nutrition	3
1113	Psychology	3
1015	Nursing	5
	P.E.	<u>1</u>
		16 hours
Second Semester		
2033	Bacteriology	3
3343	Psychology	3
1025	Nursing	5
1035	Nursing	5
	P.E.	<u>1</u>
		17 hours
Third Semester		
1113	English	3
2013	History or	
2023	History	3
2048	Nursing	8
2013	Sociology	3
	P.E.	<u>1</u>
		18 hours
Fourth Semester		
1213	English	3
2013	Government	3
2510	Nursing	10
	P.E.	<u>1</u>
		17 hours
TOTAL HOURS		68 hours

EASTERN OKLAHOMA STATE COLLEGE
Wilburton, Oklahoma

ASSOCIATE DEGREE NURSING

		Credit Hours
First Semester		
1103	English	3
1111	Orientation & Library Science	1
1104	General Physical Science	4
1114	Zoology	4
1116	Nursing	<u>6</u>
		18 hours
Second Semester		
1113	Psychology	3
2214	Physiology	4
1223	Food	3
1218	Nursing	<u>8</u>
		18 hours
Third Semester		
1203	English	3
1113	Sociology	3
2124	Microbiology	4
2118	Nursing	<u>8</u>
		18 hours
Fourth Semester		
1113	American Government	3
1493	American History	3
2218	Nursing	8
2213	Current Issues in Nursing	<u>3</u>
		17 hours
TOTAL HOURS		71 hours

MURRAY STATE COLLEGE
Tishomingo, Oklahoma

ASSOCIATE DEGREE NURSING

		Credit Hours
Summer		
Chem 1204	Descriptive Chemistry	4
First Semester		
Eng 1113	English Composition	3
Psy 1113	Introductory Psychology	3
Phy 1224	Human Anatomy & Physiology	4
Nur 1116	Physical and Mental Health I	6
Orien1011	Freshman Orientation	<u>1</u>
		17 hours
Second Semester		
Eng 1213	English Composition	3
Mic 1224	Introduction to Microbiology	4
Nur 1128	Physical and Mental Health II	<u>8</u>
		15 hours
Third Semester		
Hst 1483	American History to 1865	
or Hst 1493	American History 1865 to Present	3
Soc 1113	Elementary Principles of Sociology	3
Nur 2218	Physical and Mental Illness I	8
Elective		<u>3</u>
		17 hours
Fourth Semester		
Govt 1113	American Government	3
Nur 2228	Physical and Mental Illness II	8
Nur 2232	Trends in Nursing	2
Elective		<u>2</u>
		15 hours
	TOTAL HOURS	68 hours

NORTHERN OKLAHOMA COLLEGE
Tonkawa, Oklahoma

ASSOCIATE DEGREE NURSING

		Credit Hours
First Semester		
Nur 1013	Nursing Theory I	3
Nur 1113	Nursing Practicum I	3
HO 1111	Survey of Health Services	1
PSc 1114	General Physical Science or	
Chem 1314	General Chemistry I	4
HE 1113	Nutrition	3
Psy 1113	General Psychology	3
HPE&R	Activity Elective	<u>1</u>
		18 hours
Second Semester		
Nur 1024	Nursing Theory II	4
Nur 1124	Nursing Practicum II	4
Bio 2214	General Physiology	4
PSc 1113	American National Government	3
HPE&R	Activity Elective	<u>1</u>
		16 hours
Third Semester		
Nur 2034	Nursing Theory III	4
Nur 2134	Nursing Practicum III	4
His 1483	American History to 1865 or	
His 1493	American History Since 1865	3
Psy 2243	Adolescent Psychology or	
Psy 2333	Mental Hygiene	3
Eng 1113	Freshman Composition	<u>3</u>
		17 hours
Fourth Semester		
Nur 2044	Nursing Theory IV	4
Nur 2144	Nursing Practicum IV	4
Nur 2240	Nursing V Seminar	3
Soc 1113	Principles of Sociology	3
Eng 1213	Freshman Composition	<u>3</u>
		17 hours
TOTAL HOURS		68 hours

TULSA JUNIOR COLLEGE
Tulsa, Oklahoma

ASSOCIATE DEGREE NURSING

			Credit Hours
First Semester			
Bio	1314	Applied Human Anatomy & Physiology	4
Com	1313	Applied Composition and Speech I	3
Nur	1326	Fundamentals of Nursing	6
Psy	1113	General Psychology	<u>3</u>
			16 hours
Second Semester			
Bio	1323	Microbiology	4
Com	1323	Applied Composition & Speech II	3
Nur	1338	Maternal & Child Health Nursing	8
Psy	2023	Developmental Psychology	<u>3</u>
			18 hours
Summer			
Nur	2335	Medical-Surgical Nursing I	5 hours
Third Semester			
Nur	2325	Psychiatric Nursing	5
Nur	2345	Medical-Surgical Nursing II	5
Soc	1113	Introduction to Sociology	3
Ssc	1313	Historical & Contemporary American Society I	<u>3</u>
			16 hours
Fourth Semester			
Hum	2113	Humanities	3
Nur	2359	Medical-Surgical Nursing III	9
Ssc	1323	Historical & Contemporary American Society II	<u>3</u>
			15 hours
Summer			
Nur	2365	Medical-Surgical Nursing III	5 hours
			TOTAL HOURS 75 hours

APPENDIX B

December 4, 1972

Director of Nursing
Division of Nursing
_____ College

Dear

Recently I resigned from the Health Occupations Education Division to pursue full-time studies at Oklahoma State University. Research is always a major portion of graduate studies. Having become interested in attrition rates among practical nursing students several years ago, I plan to continue looking at nursing students, however am changing the emphasis to the associate degree nursing student.

Currently, I'm concerned with student selection procedures and would appreciate receiving information regarding your plan. I am assuming most of you have more applicants than you can accept under your limited enrollment arrangements. Please include an estimate of the number of applicants you received for admission in September of 1972. Regarding admission procedure, I'm interested primarily in admission information such as your application form, admission testing and other information. Do you interview applicants to give more information on which to make selections? Obviously your selection procedures include a desire to assist students who are likely to complete. Would you also include an estimate of your completion rate.

I sincerely appreciate being able to request the information from each of you for your experiences provide reliable information regarding the selection process. I'm enclosing an addressed stamped envelope for your reply. Thank you for your assistance, and of course I will provide you with a copy of the research should you desire it.

Sincerely yours,

(Mrs.) Mildred Pittman

MP:mn
Enc.

September 17, 1973

_____, President
 _____ College

Dear

As you are well aware, nursing education in the State of Oklahoma has gained increased interest and participation during the past few years. Since the cost per student remains comparatively high, varying attrition rates are a prime concern to administrators.

With a desire to research attrition rates, I have proposed a study entitled, "Selected Variables Relative to Persisting and Non-Persisting Students in Two Year Registered Nurse Programs in Oklahoma." My interest in this topic was kindled by many years of staff nursing and practical nurse instructor experience plus research (Oklahoma State Vo-Tech Department Mini-Grant) relative to practical nurse student attrition rates. As a doctoral student of Vo-Tech and Career Education by participation in the Oklahoma State University EPDA 552 project I am eager to study this problem.

This research is planned on the ex post facto design utilizing admission data for all students officially admitted to the institution's nursing department Fall, 1971 and who "persisted" or did not "persist" to completion Spring, 1973. Following the format of scientific research, anonymity will be established and retained with data limited to the following criteria:

Age	High School Grade Point Average
Sex	High School Science (Months)
Marital Status	High School Math (Months)
Number of Children	Previous College Enrollment
ACT Score: English	(Hours Credit)
Mathematics	Previous Nursing Employment
Social Science	Previous Nursing Education
Natural Science	Parents' Occupations
Composition	

My request is for permission to personally collect data from your institution records of nursing students enrolled during the designated interval. The exact schedule for collection to coincide with the convenience of the registrar and nursing faculty involved.

September 17, 1973
Page 2

Since I am currently serving my internship at Central State University, please address your replies to the following address:

Mrs. Mildred M. Pittman
Central State University
Department of Vocational-Technical Education
Thatcher Hall Offices - Room 8
Edmond, Oklahoma 73034

Thank you for your attention to this matter.

Sincerely,

Mildred M. Pittman

gam

This study has been approved by the candidate's doctoral committee and we recommend that she be granted permission to have access to the records requested.

Sincerely,

Robert R. Price
Committee Chairman
Oklahoma State University

gam

VITA

Mildred M. Pittman

Candidate for the Degree of

Doctor of Education

Thesis: SELECTED VARIABLES RELATIVE TO PERSISTING AND NON-PERSISTING STUDENTS IN SIX TWO YEAR REGISTERED NURSE PROGRAMS IN OKLAHOMA

Major Field: Vocational-Technical and Career Education

Biographical:

Personal Data: Born in Nance County, Nebraska, August 1, 1925, the daughter of Mr. and Mrs. Henry B. Hellbusch. Married Donel E. Pittman, February 2, 1947; mother of three sons and two daughters.

Education: Graduated from Valley High School, Valley, Nebraska, in May, 1942; Bachelor of Science (Nursing) degree from University of Colorado, Boulder, Colorado, August, 1946; Master of Education degree from Central State University, Edmond, Oklahoma, May, 1971, with a major in Guidance and Counseling; completed requirements for the Doctor of Education degree at Oklahoma State University, Stillwater, Oklahoma, in December, 1974.

Professional Experience: Various nursing positions, including staff nursing in Colorado, California, and Ohio; also charge nursing in Kansas and Oklahoma as well as nursing supervision in Oklahoma as recently as 1966; Practical Nursing Instructor at Oklahoma City, Oklahoma, during the interval of 1966-1970; Assistant State Supervisor, Health Occupations Division, Oklahoma State Department of Vocational-Technical Education during the interval of 1970-1972; EPDA 552 Awardee from 1972 to 1974.