

THE RELATIONSHIP OF ACADEMIC ACHIEVEMENT TO
PERSONALITY TYPE, AGE, AND MINORITY
STATUS IN AN ASSOCIATE DEGREE
NURSING PROGRAM

By

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CHAPTER I

INTRODUCTION

One of the many problems confronting nursing educators is lack of knowledge regarding the personality characteristics of individual students. Koehne-Kaplan and Tilden (1976) cite a need to understand the personality typing of nursing students in order to better teach them and encourage them to stay in the field once educated and employed.

Natter (1976) feels that equalization of educational opportunity is fundamental to our democratic society and that as students from new and different backgrounds become more common on college campuses, generalizations from the sixties and seventies regarding personalities are not congruent with current student populations. Recognition that students learn at different rates and in different ways creates a need in faculty to provide improved approaches to the teaching-learning environment.

Sherman (1978) points out that each year an ever increasing number of students apply for a limited number of positions in nursing schools. This trend has increased the pressure on admission committees to select those students who are most likely to succeed. The nursing program at Oklahoma State University Technical Institute is not unique in regard to this problem. Each semester approximately 180 students apply for admission to the 60 available positions. Students are admitted to the program through a selection process based on a point

system. The majority of points assigned are dependent on academic ability and achievement as measured by grade point average, American College Test (ACT), Nelson-Denney reading rate and basic math scores. Biographical and personality data does not enter into the selection process. Faculty are faced with a new group of 60 students each semester who have been selected because of their predicted level of readiness for the nursing program. There is no information readily available to faculty regarding learning styles and needs of these newly admitted students. The majority of students who complete the program are highly successful on licensure examinations. However, of the 60 students admitted to the school, approximately 20 to 28 percent leave prior to completion of the program. Sherman (1978) states that a 20 to 30 percent attrition rate in nursing schools is not unusual whether selective criteria or non-selective criteria are used for admissions. Hill (1963) cited failure in classwork as the number one reason for turnover in schools of nursing. Additional reasons included unsuitable personality, disappointment in nursing, immaturity, and personal needs. Levitt (1962) determined that personality patterns of nursing students differ significantly from patterns of the traditional college woman. Smith (1965) strongly urged that additional knowledge is needed concerning the intellectual, personal and other characteristics which distinguish successful nursing students from non-successful nursing students in order to reduce educational and personal waste.

Presently faculty in the school of nursing have no descriptive personality evaluation of student types on admission to the program. This gap in information contributes to difficulty in planning and designing teaching-learning environments that are supportive to

individual students. An investigation is needed to determine if academic achievement is related to variables other than academic ability.

Statement of the Problem

This study dealt with the lack of knowledge concerning the relationship between academic achievement, personality type, age, and minority status of students in the Technical Institute nursing program.

Purpose of the Study

The purpose of the study was to identify the personality type of individual students in the nursing program and to investigate the possible relationships between academic achievement, personality type, age, and minority status.

The study sought to find answers to the following questions:

1. To what extent is extroversion-introversion associated with academic achievement?
2. Are students who tend to be realistic, practical, and fact-oriented, higher or lower achievers than students who are imaginative and idea oriented?
3. Are students who make decisions impersonally and objectively more likely to succeed academically than students who make decisions based on human likes and dislikes?
4. Are students who tend to be flexible and spontaneous rather than students who proceed in planned, orderly ways higher or lower achievers?

5. Is the technical college student of traditional age or the technical college student of non-traditional age more likely to be a high or low achiever?

6. Is minority status related to academic achievement in the nursing program?

Scope and Limitations

This study was confined to the student population in the Associate degree nursing program at the Oklahoma State University Technical Institute in the Fall semester of 1982.

The sample population selected for study were those students who ranked in the upper or lower third of the nursing program as computed by grade point average on completion of the Fall, 1982 semester and had taken the Myers-Briggs Type Indicator.

The scope of the study was limited to the investigation of personality type, age, and minority status in relation to academic achievement. The findings of this study pertain only to this nursing program.

Assumptions

The following assumptions were made for the present study:

1. Grade point averages computed on completion of the Fall, 1982 semester accurately reflect academic achievement.

2. The students who participated in the research study were representative of previous and future students in the nursing program.

Definitions

To facilitate an understanding of this study, the following terms are defined:

Academic Achievement -- A student's accumulated grade point average on completion of the Fall semester, 1982.

a. Group I, High Achievers -- Those students who ranked in the upper third of the nursing program academically on completion of the Fall semester, 1982.

b. Group II, Low Achievers -- Those students who ranked in the lower third of the nursing program academically on completion of the Fall semester, 1982.

Associate Degree Nursing Program -- A two-year program in a technical institute or community college leading to the degree of Associate in Nursing. The degree qualifies the graduate to take examinations for licensure as a registered nurse.

Minority Status -- Those students of male gender and those students of ethnic origin other than Caucasian.

Myers-Briggs Type Indicator (MBTI) -- A self report, forced choice personality inventory which measures four bipolar characteristics: extroversion-introversion, sensing-intuition, thinking-feeling, and judging-perception (Myers, 1965).

a. Extroversion (E) - Introversion (I) -- Extrovert people attend to the outer world of people and things, while introvert people focus on the inner world of ideas and think at length before acting.

b. Judging (J) - Perceiving (P) -- Persons who prefer judging tend

to live in planned orderly ways and prefer control over their lives. Perceiving people live in a spontaneous way, are flexible and adapt easily to change.

c. Sensing (S) - Intuition (N)-- Sensing persons tend to be realistic, practical, fun loving and good with facts, while persons who prefer intuition tend to value imagination, inspiration, possibilities, and excell in problem solving.

d. Thinking (T) - Feeling (F) -- Thinking people tend to weigh facts with impersonal logic, while feeling people tend to sympathize and attend to human likes and dislikes rather than logic.

Personality Type-- The preferred pattern of ways a person chooses to use his perception and judgement as measured by the MBTI resulting in 16 different types.

Technical College Student of Non-Traditional Age-- Those students who are 22 years of age and younger and those students 40 years of age and older.

Technical College Student of Traditional Age-- Those students who range in age from 23 years to 39 years.

Organization of the Study

Chapter I presents an introduction to the problem, statement of the problem, the purpose of the study, the research questions, limitations of the study, assumptions underlying the study, and definitions.

Chapter II is a review of the related literature to the research problem. This chapter is divided into the following subheadings: The Myers-Briggs Type Indicator, Studies of Health Related Occupations, Nursing Studies and Factors Related to Achievement, Non-Traditional

Students and Academic Achievement, and Minority Status and Factors Related to Academic Achievement. A summary of the sub-headings completes the chapter.

Chapter III reports procedures utilized in this study, including a description of the population sample and selection of subjects, collection of data, instrumentation, reliability and validity of the Myers-Briggs Type Indicator, and analysis of data.

Chapter IV presents findings of the study related to age, minority status, and personality type preference. Chapter V summarizes the study, discusses conclusions, and suggests recommendations for additional research and practice.

CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this study was to examine academic achievement of Associate degree nursing students in relation to personality type, age, and minority status. This chapter is a review of the related literature pertinent to the study problem. Attention is given to research concerned with the theoretical framework and use of the Myers-Briggs Type Indicator, and the effect of personality, age, and minority status on academic achievement. Both health related occupations and nursing research are included in the review.

The Myers-Briggs Type Indicator

The Myers-Briggs Type Indicator (MBTI) has been used extensively during the past 20 years in research of personality types in various occupations. A large body of information about personality differences in health careers has been compiled using MBTI results.

Since the MBTI was the research instrument chosen for this study, the theory basis of the instrument is of interest. The MBTI is based on the theory of Jung's psychological types developed in 1924. Myers (1962) described the theory as follows:

The gist of the theory is that much apparently random variation in human behavior is actually quite orderly and consistent, being due to certain basic differences in the way people prefer to use perception and judgment.

'Perception' is here understood to include the process of becoming aware of things or people or occurrences or ideas. 'Judgement' is understood to include the processes of coming to conclusions about what has been perceived. If people differ systematically in what they perceive and the conclusions they come to, they may as a result show corresponding needs and motivations, in what they do best and in what they like best to do.

Adapting this working hypothesis, the Indicator seems to ascertain, from self-report of easily reported reactions, people's basic preferences in regard to perception and judgment, so that the effects of preference and their combinations may be established by research and put to practical use (p. 1).

Myers (1962) describes the four basic preferences which make up the structure of an individual's personality. The four basic types are explained as follows.

The Extroversion-Introversion (E-I) index differentiates between an extrovert who focuses perception and judgment on people and things, and an introvert who tends to focus perception and judgment on ideas and concepts (p. 1).

The Sensing-Intuition (S-N) index determines the manner by which an individual perceives. He may use his perception through one of the five senses, and thus rely on the sensing side of the dichotomy, or he may perceive things by way of an unconscious or intuitive manner (p. 2).

The Thinking-Feeling (T-F) index describes the person's preference between opposite ways of judging. If he relies primarily upon thinking he tends to be impersonal in making judgments. On the other hand, the feeling type discriminates between valued and not-valued (p. 2).

The Judging-Perception (J-P) index reflects on how a person deals with the outer world or extroverted part of his life. Judging people tend to live ordered lives while perceptive types tend to be more flexible and free in dealing with problems in their environment (p. 2).

In the general population, it was determined by McCaulley (1974b) that there are three extroverts to every introvert. McCaulley (1974a), in a paper presented to the American Educational Research Association, discussed concepts of the Myers-Briggs Type Indicator by illustrating with examples of data obtained from entering students at the University

of Florida in 1972. College majors that attracted 60 percent extroverts or more were Childhood Education, Business Administration, Psychology and Nursing. Introverts were attracted to Engineering, Art, Zoology, Philosophy and Forestry. Sensing types were in a majority who chose Childhood Education, Physical Therapy and Nursing. Intuitive types were found more often in Sociology, Psychology, Chemistry and English. Thinking types more often chose Engineering, Political Science and Business, while Feeling types enrolled in Education, Nursing and health related occupations. Judging types chose Engineering, Accounting, Nursing, Veterinary Medicine and Physical Education. Those who chose Forestry, Psychology, History and Occupational Therapy were generally those who preferred Perception over Judging. From this research, it appears that Nursing majors were generally Extroverted, Sensing, Feeling and Judging types.

McCaulley (1974a) predicted that students who are perceptive types are more likely to pick up more information and score higher on intelligence tests through their receptive attitudes while Judging types will make better use of their capacities and get better grades. Intuitive types tend to score higher on most aptitude tests which are designed to test verbal skills, comprehension, and ability to draw inferences. McCaulley feels that Sensing types are likely to be at a disadvantage in timed tests due to their need to read questions more than once to assure soundness of their perceptions.

Rezler and French (1975) studied students enrolled in six allied health occupations and found a high percentage of Feeling types in these six occupations. They also found that the majority of students were Extroverted types. These findings correlate with McCaulley's (1974b)

Florida study.

Studies of Health-Related Occupations

Rezler, Mrtek, and Gutman (1975) studied pharmacy students to determine if persistent high achieving students differed from low achievers in personality characteristics. Significantly more of these students in the high achievement group were typed as Introverts and Judging students. These findings correlated with Myers' (1962) studies of various college and professional groups with one exception, Intuitive types were not in the majority of high achieving pharmacy students. In this study, Extroversion was the only scale on which low achievers scored significantly higher than high achievers.

Physicians' Assistants were studied by Bruhn (1978) in an attempt to determine if personality characteristics and other data obtained on entry into the program could predict academic performance. A battery of tests administered to the students included the following: Rotter's Internal-External Focus, Budner's Intolerance of Ambiguity Scale, and the Myers-Briggs Type Indicator. The research concluded that personality measures did not add to the predictive value of I.Q., G.P.A., and Nelson-Denney Reading Rate. Angus (1972) was also interested in identifying predictors that contribute to academic achievement. Students at the Ohio University School of Allied Medical Professions were chosen for his study. Angus found that the pre-professional grade point average was the best predictor of academic and clinical performance, while biographical data and personality variables, as measured by the Myers-Briggs Instrument, were not influential in predicting academic success.

Nursing Studies and Factors Related
to Achievement

Studies concerned with academic achievement and nursing students are frequent in the literature. The problem of high attrition rates in all types of nursing programs has stimulated researchers to seek answers to this dilemma. The following review of the literature reflects this concern with student nurse achievement in all three types of programs.

Jones (1975) used the Edwards Personal Preference Schedule (EPPS) to measure personality characteristics of persistors compared to dropouts in an Associate degree nursing program. She found significantly greater needs expressed by persisters to be high in achievement, deference, and heterosexuality. Dropouts measured high on the abasement scale as well as inferiority, guilt, blame, and inadequacy. The most dominant need expressed by both groups was to analyze one's own as well as others' behavior.

Myers (1962) correlated the EPPS with the four indexes of the Myers-Briggs Indicator as follows:

<u>EPPS Needs</u>	<u>MBTI Preference</u>
Achievement	Thinking
Order	Judging
Exhibition	Extroversion
Autonomy	Intuitive/Perceptive
Affiliation	Feeling
Dominance	Extroversion
Nurturance	Feeling
Change	Perceptive
Endurance	Thinking/Judging.

Several of the studies reviewed investigated State Board Examination success or failure in relation to academic success and other variables such as age, gender, and minority status. Dubs (1975) investigated diploma nursing students in an effort to determine if there was

a correlation between academic achievement, state board scores and graduate work performance ratings. She found that the subjects were adequately prepared for first-level positions in nursing and those students who had good grades in nursing practice tended to have good performance ratings as graduates. Those who excelled in nursing theory tended to have good scores on state board examinations. The investigator concluded that cumulative grade point averages and nursing theory grades were the best predictors of success on state board examinations.

Kruger (1980) studied graduates of eight Associate degree programs in Oklahoma to determine if success or failure on state board examinations could be predicted by investigating the characteristics of first time writers of the exams as to sex, age, previous secondary education, race, and ACT scores. She found that age was a factor contributing to failure in the age group below 20 and above 56. The most successful age groups were 36 to 40, 41 to 55, and 51 to 55. The least successful age groups were 21 to 25 years. The failure rate for this group was 25 percent for both males and females. Gender was not a factor in success or failure, while race appeared to be a factor. Minority students failure rate was 58.1 percent as compared to Caucasian failure rate of 20.1 rate.

Baker (1975) also studied Associate degree nursing programs in an attempt to determine if there were nonintellective differences between those who dropped out prior to completion of the program and those students who graduated. A comprehensive battery of tests designed to measure nonintellective characteristics was administered to the students on entry to the program. The data from the study indicated that those students who completed the program were more mature, older and married. They tended to be achievement oriented, responsible and self-controlled.

Successful students also manifested accepting and nonjudgmental attitudes toward other people.

Williams (1975) also studied personality variables in relation to performance on state board examinations. Williams compared students from two types of programs, Associate degree and Baccalaureate degree. The Myers-Briggs Type Indicator did not discriminate between personality types in the two programs. The type of program did not appear to be a factor in success or failure on the examinations. Williams found that younger students in his study performed higher on boards than older students. This did not agree with Kruger's (1980) study; however, there was agreement that black students of all ages tend to fail more often than whites.

Miller and Feldhusen (1968), Bachman and Steindler (1971) and Ruiz (1967) all agreed that intellectual factors served as the best predictors of success on state board examinations. Intellectual factors included grade point averages and aptitude tests.

Richards (1972) examined differences in psychological and intellectual characteristics of students graduating from three types of basic nursing programs: baccalaureate, associate, and diploma. No statistical differences between the three groups of students were found regarding intelligence, leadership potential, responsibility, emotional stability or sociability. However, associate degree students demonstrated the highest levels of responsibility and emotional stability. All three groups appeared more responsible and emotionally stable than the average female college student of the norm group but less sociable. The IPAT test was used to test general intelligence and the Gordon Personal Profile was used to measure four aspects of personality:

ascendancy, responsibility, emotional stability and sociability.

Johnson and Leonard (1970) compared nursing students with other University of Wisconsin female students. Their study found that nursing students were average in scholastic aptitude but scored higher in mathematics and science than other women students. Personality scores of nursing students indicated they were more assertive and experimenting in comparison with other female students. Likes and dislikes reported by nursing students were more similar to those of women in physical and occupational therapy programs.

Bailey and Claus (1969) surveyed personality patterns of student nurses as an adjunct study to a Curriculum Research Project at the University of California. The EPPS was utilized to study the group. They found that nursing students differed significantly from other college women based on EPPS norms. The nursing students scored higher on Deference, Intraception, Nurturance, and Endurance but lower than the norm group on Exhibition, Autonomy, Succorance, Dominance, Change, Heterosexuality, and Aggression.

Previously earned college credit prior to entering nursing was identified as the best indicator of academic success by Montgomery and Palmer (1976). The investigators examined associate degree nursing students' academic success in relation to ACT composite scores and math scores, age, number of previously earned college credits, and acquisition of high school chemistry or physics. They found that 95 percent of the older students successfully completed the course, while 39 percent of the younger group failed.

Whittmeyer, Camiscioni, and Purdy (1971) reported on a longitudinal study of attrition and academic performance in a collegiate nursing

program. The study was based on investigation of two categories of variables, predictor and criterion. Predictors used were ACT Battery, The 16 Personality Factor Inventory (16 PFI), Myers Briggs Type Indicator, and pre-nursing point hour ratio. The criterion variables used were completion versus noncompletion of the program. The ACT mathematics score was found to be the best predictor between the two groups while the 16 PF measures indicated that students who completed tended to be less independent and less venturesome. The MBTI measures indicated that those students scoring higher on state boards tended to react to their external environment in a perceiving rather than a judging fashion. The MBTI also indicated that those students with higher nursing grade point averages tend to base decisions on feelings rather than logical analysis, they also tend to be less apprehensive.

Koehne-Kaplan and Tilden (1976) explored personality and the relationship to clinical judgment in nursing practice. Their study evolved from a concern with the changes in nursing practice and the role of the nurse. They felt that with the increasing numbers of men and older women entering nursing that a re-examination of the nurses' personality profiles was necessary. The investigators chose to use a Jungarian Type Survey to assess personality types of the students. This instrument was reported to be essentially equivalent to the MBTI. The results of the study indicated that the majority of the students were extroverted, sensing, feelers. These results were congruent with the stereotypic nursing personality found in the majority of personality studies of nurses.

Non-Traditional Students and Academic Achievement

Andragogical approaches to the teaching-learning environment were supported by several of the authors as being important factors in achieving academic success. Rosendahl (1974) stressed that significant learning and academic achievement takes place when the subject matter is perceived by the learner as having relevance for personal purpose. Rosendahl further supports the andragogical approach to nursing education in order to encourage thinking for oneself and to simulate significant learning. Along these same ideas, Wolf and Quiring (1971) proposed that adult learners are more likely to succeed in programs that provide both extrinsic and intrinsic learning variables that are organized to meet individual learner's needs. Intrinsic variables were identified to be aptitude, perseverance, and ability to understand instructions. Extrinsic variables included an opportunity for learning and quality of instruction. Kramer (1972) studied baccalaureate degree nurses in regard to role adoption and self-actualization. She stated: "Whether a nurse is perceived as being highly, averagely, or lowly successful does seem to make a most important difference in her self-actualization" (p. 111).

Minority Status and Factors Related to Academic Achievement

The minority label has been applied to various groups by numerous authors and researchers. For this study, ethnic groups and men are considered as minorities.

Gilmour, Perry and Hagerty (1974) studied "high risk" students in

nursing in order to identify problems that these students encounter in a nursing program. These authors suggested that a major problem in recruiting minority students is that of equating existing selection criteria with individual educational backgrounds. The minority student may achieve an upper rank in his high school class but later is unable to gain admission to nursing programs due to poor performance on standard admission tests. If the student is admitted, he often faces feelings of loneliness, frustration and disillusionment in a predominantly white group of students. Lack of developmental programs and role models were listed as major adjuncts to failure. An earlier study conducted by New York University researchers for the National League for Nursing Measurement and Evaluation Services (1970) agreed with these results. This study indicated that white students scored higher than black students on the National League for Nursing/Pre-Nursing and Guidance Examination. Concern was expressed regarding the validity and fairness of these tests when administered to ethnic groups.

A major study of personality types among black college students was undertaken by Levy (1972). His subjects included 758 black undergraduates enrolled in courses at Howard University. Levy utilized the Myers-Briggs Type Indicator to assess personality types of these subjects. Additional data was compiled regarding age, academic major, birth order, number of siblings and parents' occupations. The black students were compared with Amherst white students as to personality type. The major findings of the study were that Howard subjects were most often Sensing and Judging types. Levy pointed out that the predominance of Sensing-Judging orientation in black students suggested concreteness in thought and need for closure as compared to the imagination and openness of the white liberal arts students. Myers (1962)

pointed out that the Perception-Intuition preference is more often associated with academic achievement and creativity.

Men enrolled in nursing programs share many of the same problems as the female students do, however they encounter a unique set of problems as pointed out by the following researchers. Schoenmaker and Radosevich (1976) surveyed men in nursing at the University of Iowa. They found that male students were older, more likely to be married, and possessed a greater number of college credits prior to entering the program than their female counterparts. The male students identified two major problems: failure of the educational experience to meet their vocational expectations and the repressive nature of the educational system. When asked why they chose nursing, the majority of the men listed job priority as number one, while the majority of women listed humanitarian concerns as first importance. The authors concluded that men were more pragmatic and more apt to see nursing as a job. The men further identified the technical aspects of nursing as the core of nursing practice and preferred disease care rather than health care. When asked about communication with faculty, the men tended to find communication more difficult. As a minority group, the men in nursing appear to experience many of the same problems that are common to other minority groups in nursing education.

Adult learners or non-traditional age students have in the past been a minority in the colleges and universities; however, this trend is changing rapidly as enrollments depict increasing numbers of older students. A need to learn more about characteristics of the older student was the basis of a study by Kuh and Ardaiole (1979). These researchers administered the Omnibus Personality Inventory to adult

learners (23 years and older) and to freshmen (17-20 years of age). The instrument results indicated that older students were more interested in reflective thought and more scientific in their problem-solving orientation than younger students. Male adult learners were more autonomous and exhibited greater tolerance of others. Female adult learners seemed to be more emotionally mature than younger females. The authors concluded that the adult learners seemed to be relatively well adjusted and that they exhibited intellectual maturity.

Summary

The review of literature revealed that nursing students differ somewhat from other college students in personality characteristics. The typical nursing student appears to be similar in all types of nursing programs. The majority of studies using the Myers-Briggs Type Indicator found nursing students to be Extroverted, Sensing, Feeling and Judging types. Black college students were found to have tendencies toward Feeling and Judging preferences similar to nursing students. McCaulley (1974a) pointed out that Judging types often make better use of their capacities and thus obtain better grades, however Sensing types are likely to be at a disadvantage in timed tests. Feeling types were also found frequently among other health related occupations. Several of the studies indicated that personality characteristics were not the best predictors of academic performance. The studies using State Board Nursing Examination Scores as a criterion of achievement indicated that minority students had less success with the examination, as did the very young graduates and those graduates past 56 years of age. Gender did not appear to be a factor in success or non-success

on the examination. Several studies found a strong correlation between grade point average and successful boards. Two studies agreed that ACT scores were the best predictors of successful completion of nursing programs.

The literature revealed that male students in nursing experienced many of the same problems as ethnic minority students such as loneliness and frustration. There was a lack of literature specifically related to male nurses. Several of the studies did not include male nursing students in order to provide homogeneity in the sample populations.

Non-traditional age students were found to be more reflective in thought and more scientific in their problem-solving approaches. Female adult learners were described as emotionally more mature than younger females, while male adult learners exhibited greater autonomy than their younger counterparts.

CHAPTER III

METHODOLOGY

This study was conducted in cooperation with the students and faculty of the Associate degree program in nursing at the Oklahoma State University Technicial Institute in the Fall of 1982. The purpose of the study was to identify the personality type of individual students in the nursing program and to investigate the possible relationships between academic achievement, personality type, age, and minority status. These activities are discussed in this chapter.

The Study Population

Of the 212 students enrolled in the nursing program, 172 students consented to participate in the study. The group contained 17 ethnic minorities, 12 males, and 143 Caucasian females. Their ages ranged from 18 to 49 years of age.

Collection of Data

In October, 1982, the Myers Briggs Type Indicator was administered to the 172 students. In December, 1982, on completion of the semester, grade point averages were computed for all nursing students. The mean grade point average for the nursing program was determined and those students who had taken the MBTI were ranked academically by grade point. Those students who ranked in the upper third of the program were placed

In Group I and designated high achievers. Those students who were ranked in the lower third of the program academically were placed in Group II and designated as low achievers. Group I consisted of 59 students while 57 students were assigned to Group II. Those students who ranked in the middle third of the program academically were dropped from the study at this point. Age, gender, and race of each student selected for the study was obtained from admission records.

Instrumentation

The Myers-Briggs Type Indicator (MBTI) was used to assess personality type of each student. The MBTI is a self-reported, forced-choice personality inventory which measures four bipolar characteristics; extroversion-introversion, sensing-intuition, thinking-feeling, and judging-perception (Myers, 1962).

Reliability and Validity of the MBTI

Myers (1962, p. 20) stated, "Reliability coefficients of the MBTI are difficult to obtain and interpret because of inability to determine reliability to the person being tested." In attempting to solve this problem, Myers performed a split-half analysis of each index on three major studies. The results of the analysis yielded the following:

1. Scores from a sample of 200 freshmen college class yielded reliabilities from .80 to .94 with the median at .85.
2. Academic scores from twelfth grade samples yielded reliabilities from .76 to .88 with the median at .81.
3. A set of scores from under-achieving eighth grade boys yielded the only reliability under .75 (p. 20).

The MBTI was reviewed in the Sixth Mental Measurement Yearbook Reviews by Mendelsohn and Sundberg (1970). These authors pointed out that the MBTI is: (a) "easy to administer and score," (b) "provides scores on variables which are important to both theory and common sense" (p. 1127). Sunberg further stated the development of the MBTI has involved: "extensive norming and revision by internal consistency methods under the aegis of the Educational Testing Service which published the test in 1962" (Mendelsohn and Sundberg, 1970, p. 1127).

Analysis of Data

The data collected consisted of student scores from applications of the MBTI instrument, grade point averages for individual students and mean grade point in each subgroup of achievers, age in years of each subject, and identified minorities. The MBTI was computer scored by The Center for Applications of Psychological Type. The report included a scoring breakdown as to preferred type by academic groups. Data on age, grade point average and minority status were obtained from student records in the nursing department.

Chi-square was used to determine differences between level of achievement, age group, personality type, and minority status. Appropriate formulas for statistical analysis were referenced in Popham (1973) and Linton and Gallo (1975).

CHAPTER IV

RESULTS OF THE STUDY

Data collected from the 172 students participating in this study included age, race, sex, cumulative grade point average and score results of the Myers-Briggs Type Indicator. The students were placed in one of three groups dependent on grade point average. Group I was designated high achievers and included 59 students who ranked in the upper third of the nursing program academically. Group II, low achievers, consisted of 57 students who ranked in the lower third of the nursing program academically. The 56 students who were ranked in the middle third academically were dropped from the study following calculation of grade point averages.

Mean grade point averages for high achievers was 3.28. Middle achievers mean grade point average was 2.75. Low achievers mean grade point average was 2.2. Grade point averages ranged from a low of 1.81 to a high of 4.00. Table I is a comparison of mean grade point averages by achievement groups.

Demographic Data

Ages of the participants ranged from 18 to 49 years. Mean age of high achievers was 31 years, while middle and low achievers' mean ages were 28 years. Data collected on sex and minority status of the 172 students revealed the following: there were 143 female Caucasians, 12 males, and 18 ethnic minorities. Table II is a breakdown of student

TABLE I
COMPARISON OF ACHIEVEMENT GROUPS BY
MEAN GRADE POINT AVERAGE

Achievement	Grade Point Average	N
High	3.28	59
Middle	2.75	56
Low	2.20	57
N=172		

TABLE II
BREAKDOWN OF STUDENT PARTICIPANTS BY
SEX AND ETHNIC ORIGIN

Ethnic Origin	<u>Sex</u>	
	Male	Female
Asian		4
Black		9
Caucasian	11	143
Indian		2
Spanish	1	2
Total	<u>12</u>	<u>160</u>
N=172		

participants by sex and ethnic origin. With these data as a base, analysis of possible relationships between academic achievement, minority status, age, and personality type followed for Group I, high achievers, and Group II, low achievers.

Age and Academic Achievement

The mean age for Group I and Group II was not greatly dissimilar, however, the low achievers who were 18 to 22 years of age were 13 percent larger in number than the same age group in the high achievers. There was a reversal when the 38 to 42 year age groups were compared by achievement. High achievers in this age group were 10 percent greater in number than low achievers. These differences were not observed in the 23 to 37 age groups or the 43 to 49 age groups. Slightly more than 50 percent of the students ranged in age from 23 to 32 years of age. Table III is a summary of student participants based on percentage of students by age and achievement level. Chi-square analysis did not reveal significant differences between age groups and academic achievement.

Minority Status and Achievement

Minority status students for the purpose of this study were defined as either male or of ethnic origin other than Caucasian. The group consisted of seven white males, one Spanish male and nine female ethnic minorities. Table IV is a summary of this group indicating distribution by race, sex, age, and academic achievement.

The low achievers in the minority status group numbered 11 students, compared to six students in the high achieving group. There was

TABLE III
 PERCENTAGE OF STUDENTS BY AGE GROUP AND ACHIEVEMENT LEVEL

Age Group	Achievement			
	High N=59		Low N=57	
	N	%	N	%
18 - 22	9	15.25	16	28.07
23 - 27	16	27.11	16	28.07
28 - 32	16	27.11	12	21.05
33 - 37	5	8.47	8	14.03
38 - 42	7	11.86	1	1.75
43 - 47	5	8.47	3	5.26
48 - 49	1	1.69	1	1.75

TABLE IV
 DISTRIBUTION OF MINORITY STATUS STUDENTS
 BY RACE, SEX AND ACADEMIC ACHIEVEMENT

Race	Sex		Achievement	
	Male N	Female N	High N	Low N
Asian		2	1	1
Black		4	1	3
Indian		2		2
Spanish	1	1	1	1
White	7		3	4
Total	8	9	6	11

a 3:4 ratio of male high achievers to male low achievers. The ratio of female ethnic minorities who were high achievers, compared to low achieving female ethnic minorities was 3:7. Males and female ethnic minorities comprised 14.7 percent of the study population. The mean grade point average for low achieving minorities was 2.2 with averages ranging from 1.88 to 2.45 versus a mean of 3.22 and a range of 3.10 to 3.33 for high achieving minorities. These means were similar to non-minority group means.

Personality Type Preference and Academic Achievement

The MBTI administered to each of the participants was computer scored by the Center for Application of Personality Type. The results of the scoring classified each student as to personality type and indicated preference for Extroversion versus Introversion, Sensing versus Intuition, Judging versus Perception and Feeling versus Thinking. The personality types were summarized by reporting percentages of each personality type in each of the achievement groups.

Chi-square was used to compare preference for each of the eight personality indexes by high achievers and low achievers. Table V is a summary of the findings with $df=1$ at the .05 level of significance.

High achievers were nearly evenly divided in their preference for Extroversion over Introversion with a ratio of 31 to 28 students, while 34 low achievers preferred Extroversion versus 23 indicating a preference for Introversion. Similar choices were revealed by both groups regarding preference for Judging over Perceiving. The ratio for high achievers was 36 to 23, while the ratio for low achievers was

TABLE V
 2x2 CONTINGENCY TABLE OF STUDENT PREFERENCE
 TYPES BY ACHIEVEMENT LEVEL

Type Preferences	Student Achievement		χ^2
	High N=59	Low N=57	
Extrovert	31	34	.340
Introvert	28	23	
Judging	36	32	.52
Perceiving	23	25	
Sensing	35	40	1.00
Intuition	24	17	
Thinking	13	20	1.82
Feeling	46	37	

*Significance level = .05

32 to 25. The data indicated a greater number of low achievers preferred Sensing over Intuition than high achievers. High achievers were stronger in preference for Feeling versus Thinking than low achievers.

Analysis of 2x2 Chi-square values did not reveal significant differences between type preferences and academic achievement. The majority of students in both academic groups preferred Extroversion over Introversion, Judging over Perceiving, Sensing over Intuition and Feeling over Thinking.

A one-way Chi-square analysis was performed on the type preferences within each academic group to better analyze within group behavior. Results of the analysis are presented in Table VI. The analysis within achievement groups produced a significant Chi-square of 18.46 in Group I's preference for Feeling over Thinking. This preference was also significant in Group II at 5.08. In addition, Group II preferred Sensing over Intuition significantly at 9.29.

The results of combining each of the 116 students' preferences for Extroversion versus Introversion, Sensing versus Intuition, Thinking versus Feeling and Judging versus Perceiving is shown in Table VII. All 16 possible type preferences were found in the study group of students. The largest number of students (18.96 percent) indicated they were Extroverted, Sensing, Feeling, Judging types; followed by 16.37 percent who were Introverted, Sensing, Feeling, Judging types. Students who preferred other combinations ranged from 12 to one. Only one student indicated a type preference for Introversion, Intuition, Thinking and Perception.

Table VIII is a breakdown of the 116 students' type preferences

TABLE VI
 ONE-WAY CHI-SQUARE TYPE PREFERENCE
 WITHIN ACADEMIC GROUPS

High Achievers			Low Achievers		
Group I	N=59	χ^2	Group II	N=57	χ^2
Extrovert 31	Introvert 28	.16	Extrovert 33	Introvert 24	2.14
Sensing 35	Intuition 24	2.06	Sensing 40	Intuition 17	9.29*
Thinking 13	Feeling 46	18.46*	Thinking 20	Feeling 37	5.08*
Judging 36	Perception 23	2.88	Judging 31	Perception 26	.876

*Significance level = .05

TABLE VII
 DISTRIBUTION AND PERCENTAGE OF ALL STUDENTS'
 PERSONALITY TYPE PREFERENCE

Sensing (S) With		Intuitive (N) With		Judging (J)	Introverts(I)
Thinking (T)	Feeling (F)	Thinking (T)	Feeling (F)		
ISTJ* N=7 %=6.03	ISFJ N=19 %=16.37	INTJ N=2 %=1.72	INFJ N=3 %=2.58		
ISTP N=4 %=3.44	ISFP N=7 %=6.03	INTP N=1 %=.864	INFP N=9 %=7.75	Perceptive (P)	
ESTJ N=5 %=4.31	ESFJ N=22 %=18.96	ENTJ N=2 %=1.72	ENFJ N=7 %=6.03	Judging (J)	Extroverts(E)
ESTP N=6 %=5.17	ESFP N=5 %=4.31	ENTP N=5 %=4.31	ENFP N=12 %=10.34	Percep- tive(P)	

*I=Introvert
 S=Sensing
 T=Thinking
 J=Judging
 F=Feeling
 P=Perceptive

TABLE VIII
 BREAKDOWN OF STUDENT PREFERENCE
 AND PREFERENCE COMBINATIONS

Preference Type/Combinations	Number	Percent
Dichotomies		
Extrovert	64	55.17
Introvert	52	44.82
Sensing	75	64.65
Intuitive	41	35.34
Thinking	32	27.58
Feeling	74	63.79
Judging	67	57.75
Perception	49	42.24
Combinations		
Introvert/Judging	31	26.72
Introvert/Perception	21	18.10
Extrovert/Perception	18	14.13
Extrovert/Judging	36	31.03
Sensing/Thinking	22	29.96
Sensing/Feeling	53	45.68
Intuitive/Feeling	31	26.72
Intuitive/Thinking	10	8.62
Sensing/Judging	53	45.68
Sensing/Perception	22	18.96
Intuitive/Perception	27	13.17
Intuitive/Judging	24	12.05
Thinking/Judging	26	13.79
Thinking/Perception	26	13.79
Feeling/Perception	33	28.44
Feeling/Judging	51	43.96
Introvert/Intuitive	15	12.93
Extrovert/Intuitive	26	22.41
Introvert/Sensing	37	31.89
Extrovert/Sensing	38	32.75

by number and percent. Majority student preferences were Extroversion (55.17 percent), Sensing (64.65 percent), Feeling (63.79 percent), and Judging (57.75 percent). When the preferences were combined in pairs, analysis reveals that 45.68 percent of students preferred a combination of Sensing with Feeling and Sensing with Judging. Forty-three and ninety-six one hundredths percent of students preferred to combine Feeling and Judging. Fewer preferences were indicated for combinations of Intuition and Thinking (8.62 percent) and Intuition with Judging (12.06 percent).

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The problem leading to this study was the identified lack of a descriptive personality evaluation of student types in the nursing program. Additional knowledge was needed concerning those characteristics which would help to identify both successful and non-successful students early in the program in order to reduce educational and personal waste. Data were collected from a sample population of 116 students, related to personality type, age, grade point average, and minority status. The Myers-Briggs Type Indicator was the instrument used to determine individual personality types of students. Grade point, age and minority status data were obtained from student records in the nursing department. Summary, conclusions, and recommendations in this chapter are discussed in relation to the original questions delineated in Chapter I.

Question One

To what extent is extroversion-introversion associated with academic performance?

There were no significant differences between achievement groups and preference for extroversion versus introversion. Extroversion was favored by the majority of students in both academic groups. This finding agrees with McCaulley's (1974a) study of Florida State

College students where nursing as a major attracted a greater number of extroverts than introverts.

Question Two

Are students who tend to be realistic, practical, and fact oriented, higher or lower achievers academically than students who are imaginative and idea oriented?

This question sought to determine if there were differences in academic achievement when students preferred either sensing or intuitive processes in their academic endeavors. Both achievement groups in this study preferred sensing over intuitive processes with a significant preference for feeling within the low achieving group. These results are also consistent with McCaulley's (1974a) Florida study. McCaulley's reference to Sensing types being at a disadvantage on timed tests could be a factor in the significant number of low achievers preferring sensing over intuition. Students in this nursing program are subjected to timed tests throughout the nursing program.

Question Three

Are students who make decisions impersonally and objectively more likely to succeed academically than students who make decisions based on human likes and dislikes?

This question was designed to examine student preferences in relation to thinking versus feeling and to determine if preferences were different in high and low achievers. The majority of both achievement groups preferred feeling over thinking with significant preferences within both groups for feeling. These findings agree with the Rezler

and French (1975) study which found that feeling types were in the majority in six allied health occupations. High grade point averages were found to be associated with a preference for feeling by Wittmeyer, Camiscioni and Purdy (1971) in their study of baccalaureate nursing students. The findings of this study of associate degree nursing students did not coincide with the findings of the study of the baccalaureate nursing students. Perhaps a difference in collegiate level contributed to the difference.

Question Four

Are students who tend to proceed in a flexible, spontaneous way more likely to achieve higher or lower academically than students who proceed in planned, orderly ways?

Students in both achievement groups were divided on their preference for either judgment or perception, however, the majority in both groups preferred judging. McCaulley (1974a) verified that nursing majors generally preferred judging rather than perception. All nursing programs support planning and orderly procedures in caring for patients. Student majority preference for judging could stem from the emphasis on this practice in nursing curriculums. Those students who have strong preferences for perception may be at a disadvantage in the majority of nursing programs.

Question Five

Is the technical college student of traditional age or the technical college student of non-traditional age more likely to be a high or low achiever?

For purposes of this study, traditional age students were those students ranging in age 23 years to 39 years. Non-traditional age students were those who were 22 years and younger and those who were 40 years and older. In this study, the non-traditional 22 year old and younger students appeared to have greater difficulty academically than older non-traditional students. Kruger's study (1980) supports this finding. She determined that the younger age groups in nursing were more likely to be unsuccessful on state board examinations. Williams (1975) did not agree that younger students are less successful in nursing. Further study needs to be conducted in this area to identify other variables that may contribute to success and failure in this age group. One factor that may be operating in this nursing program is that the majority of students in the program are in the 25 to 32 year age group, resulting in teaching-learning experiences better suited to the majority group. There were no significant differences in academic level for the 25 to 32 year age group.

Question Six

Is minority status related to academic achievement in the nursing program?

Minority status was defined for this study to include male nurse students and ethnic minorities other than female Caucasians. Minorities in the nursing program comprised 14.7 percent of the study group with 9.5 percent in the low achieving group.

Levy (1972) pointed out that the predominance of sensing and judging preferred by black students often suggested concreteness of thought and need for closure. All of the ethnic minority students in

this study preferred sensing and judging versus intuition and perception. Of the eight males in the group, five were classified as low achievers. Introversion was preferred by seven of the males versus extroversion. Introversion preference may be related to Schoenmaker's (1976) survey of men in nursing and his conclusion that male nurses find communication with faculty difficult.

Conclusions

This study found that nursing students in this nursing program have many of the same characteristics of other nurses described in the literature. Preference for extroversion, sensing, feeling, and judgment is congruent with the typical description of personality types in other nursing programs. One could conclude that the established selection criteria for admission to this nursing program is successful in selecting typical prototypes of nursing students common to all nursing programs. At the same time, all personality types are represented in the program.

The study revealed that minorities were few in number compared to other students in the study with a ratio of 29:143. This indicates a need for continued efforts in recruiting and retaining minority students until graduation. Minorities and younger students were prominent in the low achieving group. Additional investigations of this groups are needed to gain more in-depth knowledge and awareness of needs and problems related to academic difficulty. Several of the minority and younger students were found to prefer introversion. Due to the smaller numbers in these groups, there was difficulty in pinpointing definite factors that could impact on achievement.

Personality type does not appear to be a factor closely related to academic achievement in this nursing program. This finding coincides with research reported by Bruhn (1978), Angus (1972), Ruiz (1967), and Montgomery (1976). Apparently, grade point average is related to factors other than personality type.

Recommendations

Personality type may not be a predictor of academic success, however this knowledge would contribute to faculty understanding of individual students so that improved planning for student needs could be strengthened. Consideration should be given to the possibility of typing each student on entry into the nursing program for the purpose of longitudinal studies related to dropouts, failures, and progress after graduation.

It is further recommended that faculty be typed so that teaching-learning experiments matching faculty types with student types could be studied to determine if this would enhance the educational environment. Self-understanding is important to everyone and would be of value to both faculty and students.

Review of current literature related to nursing indicated a lack of research regarding men in nursing. Additional studies in this area would further contribute to the body of knowledge about nurses and nursing.

The very young student in associate degree nursing programs is a type of minority that needs further study and description. An experiment in mentoring could possibly reveal new and supportive approaches for this group.

Gathering data of student types for several years or at intervals of three to five years would provide information and knowledge to faculty regarding the profile of the student body.

Even though there is an apparent heterogeneity found in the age spread of students in the program there appears to be too few men and ethnic minorities in the program in relation to Caucasian females. Increased effort in recruiting men and ethnic minorities needs further study and planning.

A study comparing students in this program with other Associate Degree Nursing programs in the area would help in determining if present selection methods and approaches are successful in selecting typical students for the program.

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2
VITA

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Doctor of Education

Thesis: THE RELATIONSHIP OF ACADEMIC ACHIEVEMENT TO PERSONALITY TYPE, AGE, AND MINORITY STATUS IN AN ASSOCIATE DEGREE NURSING PROGRAM

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