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The relationship of personality characteristics, barriers, and coping strategies to participation and persistence in a nontraditional adult education program

Stein, Bonnie Carol Fox, Ph.D.
The Ohio State University, 1989
THE RELATIONSHIP OF PERSONALITY CHARACTERISTICS, BARRIERS, AND COPING STRATEGIES TO PARTICIPATION AND PERSISTENCE IN A NONTRADITIONAL ADULT EDUCATION PROGRAM

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

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The Ohio State University

1989

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Advisor
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In memory of my beloved father,
Dr. Bernard A. Fox,
whose curiosity for continuing learning
and growth was my inspiration.
ACKNOWLEDGEMENTS

I would like to thank Dr. William D. Dowling for his support and guidance during my research. His never-ending patience and optimism were truly inspiring. I also thank the other members of my committee, Drs. David Boggs and Stephen Wilson for their guidance and many helpful suggestions.

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Lastly, I extend my deepest love and gratitude to my beautiful family. To my husband David, I express my eternal gratitude for just "being there". My son, Matthew, deserves special kudos for showing me always how
proud he was of me as his "almost Dr. Stein" and as his mother. His caring and concern for me has touched me greatly. My son, Joshua, was always understanding of my need to work and for this I extend my special love to him.
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CHAPTER I
INTRODUCTION

Background of the Problem

Adult enrollment in colleges and universities has dramatically increased since the early 1970's. Institutions of higher education will continue to be affected by the aging of the "baby boom" generation and the fewer numbers of traditional aged college students in the general population. "Men and women age 25 and older now account for six million - or 45 percent of the nation's graduate and undergraduate students . . . by the 1990's they are expected to be in the majority" (U.S. News & World Report, 1988, p. C31).

The picture of the traditional college student population has been slowly changing as adults become more heavily represented on college campuses (Cross, 1981). Kasworm, (1980) in her study of intellectual and socio-emotional orientations of traditional college age and older (adult) undergraduate students, found that "older students bring a maturity, a developed identity, a broader theoretical perspective and analytic, problem-solving capacity to the intellectual arena" (Kasworm, 1980, p. 40). Institutions of higher education have
begun, and will have to continue to address the needs of the adult student in order to maintain the viability of higher education.

Adults are returning to school for many reasons. These include: 1) the more education one has, the more one wants (Cross, 1979); 2) changing career patterns, which necessitate additional educational skills or training (Aslanian and Brickell, 1980; Boaz, 1978; Carp, Peterson, and Roelfs, 1974; Cross, 1979; Johnstone and Rivera, 1965); 3) increased leisure time; and 4) technological change, including changes in science and technology and the knowledge explosion (Cross, 1981).

In the health field, it has become necessary for most professionals to return to school to update their knowledge or to advance in their professions because of the last reason cited above, i.e., the rapid changes in information, technology, and science. Traditionally, in allied health, professionals who desire to advance may move from entry-level, nine-month certificate programs through the following levels; certificate or diploma programs offered in hospitals and technical schools; associate of science programs offered in community colleges; baccalaureate programs; masters programs; and doctoral programs. Movement of a health practitioner
from one level of a profession to another (career mobility, articulation, or progression) traditionally has been difficult for the health professional if because of family or work constraints, he or she could not attend a formal educational program on a full-time basis.

Pariser and Stein (1981) reviewed the history of events that shaped the trend toward progression in the medical records field. The following is a summary of these events. The enactment of two laws in the 1970's demonstrated federal interest in health career mobility and began to pave the way for more flexible methods for adult health care practitioners to progress. P.L. 91-519 granted authority to the Division of Allied Health Manpower of the U.S. DHEW to examine alternative means of occupational advancement for health professionals (U.S. DHEW, 1971). A second law, P.L. 92-603, mandated that selected allied health professions implement equivalency and proficiency examinations to be used as an alternative method for ART's to progress instead of formal education and subsequent certification (U.S. DHEW, 1976, p. 122). In 1979, the National Commission on Allied Health Education (NCAHE) recommended in Primary Recommendation 13, along with other guidelines for allied health educational development, that "educational and
collaborating institutions should adopt mechanisms to facilitate the removal of unnecessary barriers to student progress." (NACHE, 1979) Colleges and universities were asked to adopt mechanisms to ease progression from one level of the profession to another.

The American Medical Record Association (AMRA), which is the national professional organization for the medical record administration profession, has been concerned since the late 1960's with avenues of career mobility/progression for entry-level professionals who desire to move to the higher level of the profession. In the medical record administration profession, there are two levels. Accredited Record Technicians (ART's) constitute the entry/technical level of the profession. ART's may obtain their education by attending a two-year associate degree program at a community or technical college or by enrolling in the American Medical Record Association's independent study program. Graduates of both programs must then take the national certification examination offered by AMRA in order to be accredited. The second level of the medical record administration profession is the administrative or Registered Record Administrator (RRA) level. RRA's must attend a four-year baccalaureate degree program and then take the national
certification examination offered by AMRA to become registered.

In 1969, AMRA, in recognition of the need for programs that would allow ART's to progress to the RRA level, issued a formal statement that expressed this need. Part of the statement was as follows:

The American Medical Record Association believes that an Accredited Record Technician should have the opportunity to complete academic requirements for a Registered Record Administrator ... educational programs should be coordinated to allow ease of progression, avoid subject matter duplication, and minimize loss of academic credit ... The responsibility for evaluating formal educational programs and related work experiences and granting credit, advanced standing, or equivalency work experiences rests with the individual education institution.

(AMRA, 1969)

Following this statement, AMRA's Education and Registration Committee (now the Council on Education) conducted a survey in 1971 and 1975 to collect information from ART's and Medical Record Administration (MRA) program directors to be used for planning innovative ART progression programs. It was found that several MRA programs had established mechanisms for ART progression, and that there was a need for more progression programs that were "nontraditional" in format, i.e., offered in weekend, evening and summer courses (AMRA, 1975).
Barclay (1972) and Berkbuegler (1979) studied the demand for ART progression programs during the seventies. Barclay found that, at the time of her study, approximately 20 percent of the ART membership were interested in progression. Berkbuegler found that 75 percent of the ART's surveyed were interested in taking additional medical record courses. A majority of those surveyed were interested in obtaining a Bachelor's degree and in taking challenge exams to avoid duplication of knowledge and skills.

Also during the 1970's, AMRA conducted a study to delineate and validate the roles and functions of RRA's and ART's (AMRA, 1975). Results of the study showed that: 1) a variety of avenues was needed to meet the true needs of ART's who wished to progress; 2) educational offerings sponsored by traditional medical record administration programs needed to be made less rigid and more flexible to meet the need of ART's who could not leave jobs and families to enroll in full-time programs; and 3) assessment mechanisms, such as challenge exams and portfolios to document life experiences, were needed to prevent ART's from having to repeat learning experiences.

In 1977, AMRA task force appointed a subcommittee on ART-RRA progression. In 1978, an AMRA task force was
charged with recommending methods that would enable ART's who already held a baccalaureate degree to take the registration exam (AMRA, 1978). The task force was asked to consider ways which would permit these ART's to meet the knowledge and skill requirements specified in the AMRA essentials for MRA programs without having to complete all of the requirements of a traditional medical record administration program. The task force recommended that: 1) Information on progression programs that already exist be disseminated; 2) two possible alternative methods for progression be made available; and 3) a study be conducted to verify ART knowledge gained through experience that would qualify as RRA level knowledge.

From the task force recommendations, a list of approved medical record administration schools that had or were considering ART progression programs was published. An ART Pilot Project was also conducted to determine whether the experimental backgrounds of ART's were similar to the course work included in current MRA programs. The project also was conducted to determine whether ART's whose equivalent backgrounds could not be documented should be required to take course work (Reding, 1980). As a result of this study, a committee
was appointed to develop a shortened progression program for ART's with baccalaureate degrees. This committee proposed the necessary components, such as program goals, purpose, objectives, time frame and evaluation of students, that needed to be addressed in shortened progression programs (AMRA, 1979).

In 1980, AMRA formally solicited grant proposals to assist schools in establishing innovative progression programs. The Ohio State University Medical Record Administration Program responded to this call for proposals by developing a "Curriculum Guide for a Nontraditional Medical Record Administration Program for ART Progression" (Pariser and Stein, 1981). AMRA distributed the guide to colleges and universities nationwide to be used in their development of nontraditional medical record administration programs (progression programs for ART's). After publication of the guide, The Ohio State University's Medical Record Administration Program applied for and received a grant in 1981 from the W.K. Kellogg Foundation, Battle Creek, Michigan, to develop its own nontraditional medical record administration program. The first class of students enrolled in the nontraditional program in June of 1983.
In 1988 there were only a few schools nationwide that had developed nontraditional progression programs for ART's who wished to progress to the RRA level of the profession. All programs, in varying degrees, address the needs of adult students by: 1) assessing prior education and learning experiences and allowing students to "challenge" material already mastered through exams; 2) providing credit for life experiences; 3) formatting professional level courses in concentrated sessions (e.g., summers and weekends) so that students only need to travel to campuses during concentrated time periods; 4) designing individual plans of progression based on the assessment of the individual's prior experience; 5) allowing students to complete prerequisite and basic educational requirements at colleges and universities near the students' homes; and 6) providing opportunities for independent and self-directed study.

**Statement of the Problem**

In July 1988, there were approximately 14,400 active ART's (Finnegan, 1988) in the United States who belonged to the American Medical Record Association. It is unknown how many ART's do not belong to the AMRA, but it is estimated that they constitute a significant number. Although the need for progression programs has been
expressed by the ART population and has been addressed in the medical record administration profession literature, the nontraditional medical record administration programs that exist have not enrolled a large number of adults from the ART population. From records studied at The Ohio State University's Nontraditional Medical Record Administration Program, it has been found that many ART's inquire about the nontraditional program for progression, but only a small number actually enroll.

Hancock (1983) attempted to address possible reasons for low enrollment by identifying barriers to enrollment for adult women returning to college in the Nontraditional Medical Record Administration Program at The Ohio State University. Hancock studied ART's who were "actively" pursuing entry into the Nontraditional Medical Record Administration Program, (i.e., those that had submitted college transcripts, a self-assessment curriculum document, and had continued to correspond with the nontraditional program for the purposes of future enrollment) and found that "overall, female accredited record technicians interested in career progression through the nontraditional program at The Ohio State University reported that there were few barriers serious enough to prevent them from enrolling in school.
Barriers that were reported to be most serious were those situational in nature" (Hancock, 1983, p. 65). Although Hancock made an attempt to address reasons for low enrollment, her choice of a sample of those ART's actively involved in corresponding with Ohio State University might not have presented a true picture of all ART's progression needs. Other researchers have investigated the reasons for participation by adult students in other fields and some have identified barriers to enrollment in programs other than medical record administration (Boshier, 1971; Fisher-Thompson, 1980; Houle, 1961; Martindale and Drake, 1988; Morstain and Smart, 1974; Reehling, 1980; Tough, 1968).

To date, there has been a lack of research conducted that determines the characteristics of those ART's who participate and those ART's who do not participate in nontraditional medical record administration programs. Previous research in the area of reasons for adult participation in educational activities has not concentrated on personality variables that might predict participation and persistence in educational activities. Lack of knowledge about characteristics of ART's who enroll as compared to those ART's who do not enroll in existing nontraditional progression programs has hindered
program planning and marketing efforts on the part of the nontraditional progression program planners/faculty. Knowledge of characteristics of ART's who choose to participate and persist in their educational efforts as compared to those ART's who do not choose to participate could assist medical record administration program planners in modifying program curriculum, design, and counseling efforts to attract ART's who are not enrolled and to select those ART's with characteristics compatible with the nontraditional program.

Purpose of the Study

The purpose of this study was to determine which belief orientations (loci of control), achievement needs (achievement motivations), barriers to participation, and strategies for coping with these barriers are associated with ART's who participate and persist and ART's who do not participate in The Ohio State University Nontraditional Medical Record Administration Program. Social learning theory (Rotter, 1966) and achievement motivation theory (Atkinson, 1966) provide the conceptual framework upon which this study is based. Social learning theory relies on learned social behavior and considers how individuals make choices given the vast array of potential behaviors available. Behavior which
has the strongest potential for occurrence depends on expectancy, reinforcement value, and the psychological situation. In social learning theory, "a behavior potential is higher when expectancy and reinforcement value are both high, or when one is high and the other moderate, than when both are low" (Phares, 1976, p. 14). Locus of control theory, which was derived from Rotter's social learning theory, has important implications for an individual's choice of behavior in relation to participation in and persistence at an educational activity. Locus of control is a personality construct that describes the degree to which an individual believes that his actions are able to influence his outcomes. Individuals who possess an internal locus of control have been shown to be associated in various degrees with behaviors that include participation in and persistence at an educational activity. This study examines whether the construct of locus of control can be helpful in differentiating which adults participate and persist in nontraditional medical record educational programs.

Achievement motivation theory, a second personality construct, is pertinent to achievement-oriented activities and is considered a need or motivation to approach or gravitate toward success. Atkinson's (1966)
theory of achievement motivation upon which this study is based, suggests that there are two motives: the motive to approach success, $M_s > M_{af}$ ($M_s$=motive to approach success and $M_{af}$=motive to avoid failure) and the motive to avoid failure (when $M_{af} > M_s$). "The strength of the motivation to perform a task when no alternatives are offered and when the individual is constrained should be greatest when the expectancy (or "$P_s"$-subjective probability that the act will have as a consequence the attachment of an incentive) is .50" (Atkinson, 1966, p. 18). In other words, those high in the need for achievement are motivated most by tasks of intermediate difficulty and will show a positive interest in achievement-oriented activities. The individual in whom $M_{af} > M_s$ will avoid activities that are achievement-oriented unless he receives other external sources of positive motivation. High levels of achievement motivation have been associated with the following characteristics in individuals: persistence, a striving for a certain standard of excellence, accomplishing difficult tasks, working independently, aligning oneself with high status targets, showing the willingness to approach achievement-related tasks, ability to delay gratification, and ability to deal with frustrating situations and ambiguity. These characteristics are, to
another, associated with participation and persistence in an extended educational activity, such as enrolling in and obtaining a college degree. The construct of achievement motivation is examined in this study as one which may differentiate participation in and persistence at an educational activity (nontraditional medical record programs).

Used together, social learning theory and achievement motivation theory offer two frameworks to describe personality characteristics that can be useful in describing resulting behavioral tendencies of individuals such as participation and persistence in an academic program.

The objectives of this study were:
1) To determine if there is a difference in locus of control orientation between participants and nonparticipants in an adult educational activity;
2) To determine if there is a difference in achievement motivation between participants and nonparticipants in an adult educational activity;
3) To determine if there is a difference in locus of control orientation between persisters and nonpersisters in an adult educational activity;
4) To determine if there is a difference in achievement motivation between persisters and nonpersisters in an adult educational activity;
5) To describe the relationship between locus of control and achievement motivation;
6) To describe the relationship between age and locus of control;
7) To describe actual and perceived barriers to participation in an adult educational activity and determine if there are differences in these barriers between participants and nonparticipants; and
8) To describe coping strategies suggested by participants and nonparticipants to eliminate barriers to participation and determine if there are differences in these coping strategies.

This study provides a base of knowledge to assist in future investigations of whether certain personality characteristics (beliefs and needs) and barriers and coping strategies are associated with the RRA level of the profession. If certain control orientations and achievement motivations are associated with the RRA level of the medical record administration profession, then this knowledge would help to explain why greater numbers of ART's are not enrolling in nontraditional progression
programs. Also, an understanding of barriers that ART's face before enrolling in an educational program will provide a more accurate picture of the magnitude of enrollments educational program planners might expect. Understanding such barriers may be useful to administrators in a position to reduce or eliminate the barriers. In addition, more effective marketing strategies to attract desirable ART's can be developed. Faculty of academic institutions that currently offer or want to offer progression programs will also be able to institute support (counseling) programs to assist ART's who do not participate or persist to enable these ART's to develop belief systems and coping strategies to reduce barriers to participation. These efforts will allow individuals to be more successful in academic and managerial situations.

Definition of Terms

Several key terms are defined to establish their context in this research. The definition is that of the researcher when references are not cited.

1. **Achievement Motivation** (achievement need, need for achievement; abbreviated as "nAch") - A personality construct, motive-based, that reflects a strong goal orientation and obsession with a job or task (Organ...
and Bateman, 1986). Achievement motivation will be measured by the Measure of Individual Differences in Achieving Tendency (Mehrabian and Bank, 1978).

2. **Accredited Record Technician** - (ART)

   A person who possesses the technical skills necessary to maintain components of health information systems consistent with medical, administrative, ethical, legal, accreditation, and regulatory requirements of the health care delivery system. A person is considered an accredited record technician after completing a mandatory education program and passing a national certification exam. (AMRA, 1979)

3. **Locus of control** - "The degree to which people perceive causal links between their actions and what befalls them" (Lefcourt, 1976). Locus of control will be measured by the Rotter Internal-External Control Scale (Rotter, 1966).

4. **Nontraditional study (program)** - A program of study that does not follow the conventional structure of most educational programs. Nontraditional programs can be defined as ones which stress the needs of the students before the needs of the institution. Students are encouraged to pursue different opportunities as compared to following rules and regulations, and competence and performance are stressed over time, space, and content requirements. (Commission on Nontraditional Study, 1973).
5. **Participation/nonparticipation** - The decision, on the part of an ART, to pursue/not pursue (enroll/not enroll) in a nontraditional Medical Record Administration Program at The Ohio State University. Three designations are used throughout this study:
a) **Participant ART's** refers to ART's from Ohio who were enrolled in The Nontraditional Medical Record Administration Program at The Ohio State University during Summer, 1988; b) **Nonparticipant ART's** refers to ART's from Ohio who were not enrolled in The Ohio State University Nontraditional Medical Record Administration Program during Summer, 1988 whose highest level of formal education was high school or two-year community college; c) **"Nonparticipant ART's with college"** refers to ART's from Ohio who were not enrolled in The Ohio State University Nontraditional Medical Record Administration during Summer, 1988 who possess a four-year baccalaureate degree or who were, at the time of the data collection, enrolled in a four-year baccalaureate degree program. Nonparticipant ART's with college were designated as a separate study group because, although they were
not participating in the Nontraditional Medical Record Administration Program at The Ohio State University, these individuals were thought to be similar in needs and beliefs to those ART's participating in the Nontraditional Medical Record Administration Program because they either possessed a four-year college degree, or were enrolled in a four-year degree program.

6. **Persistence** - An attitude, on the part of an ART, which fosters continuation in the Nontraditional Medical Record Administration Program at The Ohio State University. (In this study, persistence/nonpersistence will be operationalized as: 1) enrollment in the first phase (summer) of the Nontraditional Medical Record Administration Program (students who have not yet persisted); 2) enrollment in the second and third phases (summers) of the Nontraditional Medical Record Administration Program at The Ohio State University (students who have persisted) and; 3) completion by nonparticipant ART's of a four-year baccalaureate degree program, masters degree program, or doctoral degree program (individuals who have persisted).
7. Registered Record Administrator - (RRA)

A person who plans, designs, develops, evaluates and manages health record systems to include administrative and clinical statistical data and health records in all types of health care facilities, organizations and agencies. The medical record administrator combines knowledge of health care, health records, information management and administration to provide services which meet the medical, administrative, legal, ethical, regulatory and institutional requirements of the health care delivery system being served. A person is considered a registered record administrator after completing a mandatory education program and passing a national certification examination.

(AMRA, 1981)

Research Questions

Central Research Question:

Are particular locus of control orientations, achievement motivations, barriers to participation, and strategies for coping with those barriers associated with participation/nonparticipation and persistence in a nontraditional medical record administration program?

Subsidiary Research Questions:

1. Is there a difference in locus of control orientation among: a) participant ART's; b) nonparticipant ART's; and c) nonparticipant ART's with college?

2. Is there a difference in need for achievement (achievement motivation) among: a) participant
3. Is there a difference in locus of control orientation among: a) first year nontraditional medical record administration students (students who have not yet shown persistence by attending the second and third summers of the nontraditional medical record administration program), b) second year nontraditional medical record administration students and third year nontraditional medical record administration students (students who have shown persistence); and c) nonparticipant ART's who possess a four-year baccalaureate degree or a master's degree?

4. Is there a difference in need for achievement (achievement motivation) among: a) first year nontraditional medical record administration students (students who have not yet shown persistence); b) second and third year nontraditional medical record administration students (students who have shown persistence) and, c) nonparticipant ART's who possess a four-year baccalaureate degree or a master's degree?
5. What is the nature of the relationship between need to achieve and locus of control orientation for: a) participant ART's; b) nonparticipant ART's and, c) nonparticipant ART's with college?

6. What relationship exists between age of ART's and locus of control for: a) participant ART's; b) nonparticipant ART's; and, c) nonparticipant ART's with college?

7. Are there any barriers that ART's believe exist to prevent them from participating in a nontraditional ART progression program?

8. What are the barriers that ART's have actually experienced that have prevented them from participating in a nontraditional ART progression program and how do these barriers differ between: a) participant ART's; and b) nonparticipant ART's?

9. What are the barriers that ART's perceive exist for an ART trying to enter a nontraditional ART progression program and how do these barriers differ between: a) participant ART's and b) nonparticipant ART's?

10. What are the coping strategies for overcoming actual and perceived barriers to participation suggested by: a) participant ART's; and b) nonparticipant
ART's and how do the coping strategies differ between these groups?

**Assumptions**

This research is based on several assumptions. It was assumed that locus of control and achievement motivation constructs are suitable representations of beliefs and motivations, respectively, for participation and persistence in an educational program and that the Rotter (1966) Internal-External Locus of Control Scale and the Mehrabian and Bank (1978) Measure of Individual Differences in Achieving Tendency accurately represent these concepts in the situation under study.

It also was expected that respondents would answer all questions honestly with no intent to misrepresent information.

**Limitations**

The relationships among locus of control, achievement motivation and participation and persistence are the focus of this study. The study does not attempt to test causal relationships among any of the variables under study. This effort is beyond the scope of this study.

The foundation of this research involves the body of knowledge surrounding locus of control and achievement
motivation. Statements about relationships between variables are limited to the Rotter (1966) Internal-External Locus of Control Scale, the Mehrabian and Bank (1978) Measure of Individual Differences in Achieving Tendency, and other items on the questionnaire used in this study and do not include any other locus of control, achievement motivation or other instruments.

As previously mentioned, there is a need for further research to formulate and test hypotheses based on the correlations and other findings of this study. Although this study does not attempt to test hypotheses, it is a step toward establishing data concerning characteristics of ART's who participate and persist and ART's who do not participate in a nontraditional medical record administration program. The success of this study relies in large part upon the reliability and validity of the Rotter Internal-External Scale and the Mehrabian and Bank Measure of Individual Differences in Achieving Tendency, as well as in successful survey research collection and interpretation of data.

The two samples under study are linked, respectively, to Ohio ART's who participated in The Ohio State University Nontraditional Medical Record Administration Program during the summer of 1988 and
active Ohio ART's who did not participate in the program. The participant sample was a purposive one; random sampling methods were not employed. Conclusions drawn from this sample are limited because of the purposeful nature of the sampling technique and therefore caution in generalizing results to the population of nontraditional students in The Ohio State University Nontraditional Medical Record Administration Program must be exercised. Conclusions drawn from the nonparticipant sample are limited to populations with similar characteristics. Generalizations of the results from this study to samples/populations from other nontraditional medical record administration programs can be made to the extent that populations are similar.
A review of literature pertinent to this study is presented in this chapter. Reasons for participation and nonparticipation in adult education activities are discussed. A rationale for the use of personality constructs in explaining participation and persistence is then presented. The following two sections discuss the specific personality theories of achievement motivation and locus of control, respectively, as they relate to participative and persistent behaviors. The chapter concludes with a discussion of the relationship between achievement motivation and locus of control.

REASONS FOR PARTICIPATION AND NONPARTICIPATION IN ADULT EDUCATION

Early Research Efforts

Much research has been conducted on reasons why adults participate or do not participate in adult educational activities. Early research efforts concentrated on identifying motivational factors through
qualitative study of adults involved in adult educational activities (Cross, 1981).

Houle (1961), in his landmark qualitative study of motivations for adult learning, developed a three-way typology of adult learners that has had much influence on subsequent studies of adult motivation to learn. The typology included three orientations of learners. "Goal-oriented" learners were found to be motivated to use learning to obtain specific, concrete objectives. "Activity-oriented" learners were found to be motivated to participate in adult learning activities because of the activity itself rather than the learning acquired from the activity. (For these learners, it was found that by-products of the learning activity, such as ability to make social contacts, were of primary consideration). "Learning oriented" learners were found to be motivated by their desire to increase their knowledge and growth.

A later study by Tough (1968) focused on adults' motivations for participation (undertaking) and persistence (continuing) in self-directed learning projects. Tough found that 1) adults usually have more than one reason for participating in a learning project; 2) adults are usually motivated to use the knowledge or
skill gained from a learning activity; 3) adults generally find learning to be enjoyable and their enjoyment serves as a reinforcer to continue (persist) in their efforts.

Quantifying Reasons for Adult Participation

In an effort to measure reasons for participation more empirically, a number of researchers built on Houle's and Tough's qualitative research efforts by developing instruments to measure adult motivation. (Cross, 1981)

Sheffield (1962) used factor analysis to identify five adult learning orientations from a list of fifty-eight reasons why adults participated in learning activities. These motivational factors were: 1) learning, 2) desire for sociability; 3) personal goals; 4) societal goals; and 5) need fulfillment. Sheffield divided Houle's goal-oriented learner into two groups: those with personal goals and those with societal goals. He also redefined activity orientation as the desire for sociability and need fulfillment.

Boshier (1971) and Burgess (1971) made attempts to quantify adult motivation to participate in learning by developing an Education Participation Scale and a
Reasons for Educational Participation Scale, respectively.

Burgess (1971), building on Houle's and Sheffield's work, found that from his Reasons for Educational Participation Scale, adult motivation for participation in learning activities could be factored into seven groups: 1) desire to know; 2) desire to reach a personal goal; 3) desire to reach a social goal; 4) desire to reach a religious goal; 5) desire to escape; 6) desire to take part in an activity; 7) desire to comply with formal requirements. Two factors (desire to reach a religious goal and desire to comply with formal requirements) did not fit into Sheffield's categories.

Grabowski, (1972) found that the first five factors in his study of reasons for adult enrollment in a self-directed bachelor's degree program were identical to Burgess' first five factors. Grabowski identified the desire to study alone and the desire for intellectual security as sixth and seventh factors that differ from Burgess' last two factors.

Morstain and Smart (1974), using Boshier's Education Participation Scale found six factors inherent in the Scale. They postulated that adults could be motivated to participate in learning by the need: 1)
for social relationships; 2) to meet external expectations; 3) for social welfare concerns; 4) to advance professionally; 5) to provide escape or stimulation; and 6) to meet cognitive interest needs. Morstain's and Smart's six factors are related to Houles' typology in that factors 2 (External Expectations) and 4 (Professional Advancement) can be related to goal-oriented learners; factors 5 (Escape/Stimulation) and 1 (Social Relations) can be related to activity-oriented learners; and factor 6 (Cognitive Interest) can be related to learning-oriented learners. Factor 3 (Social Welfare) was not found to have a clear-cut relationship to Houle's typology, but was found to relate to both social relationships and to cognitive interest.

Recent Research Efforts

Recent research efforts have concentrated on 1) re-examining Houle's typology and other motivational factors from earlier works, 2) empirically testing these factors, 3) applying these factors to specific subpopulations of adults.

Apt (1978) looked at positive and negative factors which could influence an adult to participate or not to participate in higher education. She identified four major factors (self-development goal factors, affective
barrier factors, career goal factors, and situational barrier factors) which influence adult's participation/nonparticipation in higher education. Apt's motivational factor groupings supported a previous model by Miller, which emphasized that "participation in adult educational activities (is) dependent on the degree of congruence or conflict between an individual's personal needs and the strength of social and situational forces in any given situation" (Apt, 1978, p. 4). Situational barrier factors were found to be most important in the adults' decision to participate/not participate, followed by self-development and career goal factors.

Aslanian and Brickell (1980) attempted to test a hypothesis concerning adult participation that stated that transitions in adults' lives (such as marriage, job change, having children, etc.) served as catalysts for adults to obtain additional learning. A majority (83%) of those interviewed by telephone cited that transition was the motivating factor that caused them to seek additional learning.

Boshier and Collins (1985) undertook a large scale empirical testing of Houle's typology. In their study of 13,442 adult learners from Africa, Asia, New Zealand, Canada and the United States, they found that Houle's
goal and learning motivational factors fit their study samples very clearly, but that the activity motivational factor "was evident but only as a forced aggregate of the social stimulation, social contact, external expectations and community service factors". (Boshier & Collins, p. 113). Boshier and Collins believed that the motivational factor of activity orientation is more complex than Houle had described. In 1986, Furst offered a further interpretation of the Boshier-Collins' cluster analysis of Houle's typology and provided some ordering principles for the analysis.

Subgroups of the adult population also have been studied in terms of these adults' reasons for participation. Clayton and Smith (1987) examined motives for returning to college among undergraduate reentry women and found the following eight motivational factors (in order of importance) for reentry women: 1) vocational, 2) self improvement, 3) knowledge, 4) family, 5) self-actualization, 6) humanitarian, 7) social, 8) role.

Older adults' (as a subgroup of the adult population) reasons for participation have not been heavily researched. Havighurst (1976) and McClusky (1974) both stressed the importance of needs to
participation. Havighurst proposed that instrumental needs (issues that address health, income, retirement, etc.) and expressive learning needs (i.e., activities in which the goal of learning is inherent within the learning task) are crucial for older adult participation in education. McClusky proposed a hierarchy of five types of older adult needs which includes 1) coping; 2) expression; 3) contribution; 4) influence; and 5) transcendence. McClusky suggests that programs for older adults must correspond to the hierarchical level at which the older adult is operating.

Daniel, Templin, and Shearon, (1977) conducted a large-scale empirical analysis of over 13,000 people in a community college system in North Carolina and found that there were four main reasons for involvement of older adults in higher education. These were: desire to improve; desire for social-cultural contacts; desire to increase vocational-monetary standing; and desire to meet external expectations (expectations of others). Older adults listed improvement and social-cultural needs and younger adults listed vocational-monetary needs as motivations for participation.

Knowlton (1977), in a survey of participants in an Elder Hostel program, found the following six main reasons (in order of frequency) for older adult
participation: opportunities to change, suitable time, low-cost, absence of tests or homework, types of courses offered, and opportunity to develop as a person.

Romaniuk and Romaniuk (1982) studied Elder Hostel programs in fourteen colleges and universities in Virginia and found that learning content and involvement in new experiences were the most important motives for older adults to participate. These findings are consistent with Daniel, et al (1977) and Knowlton's (1977) findings.

Fisher (1986), in a study of active older adults, identified predictors of participation in educational activities. He found that participants had a lower level of anomia (level of alienation, loneliness, and lack of distinctive expectations) than nonparticipants and that other factors, such as education attainment, using self-directed learning, and being in touch with their own learning needs were also related to participation.

Barriers to Participation

Researchers have not concentrated as heavily on the opposite of participation, i.e., reasons for nonparticipation, or barriers and deterrents to participation as they have on why adults participate (Scanlan and Darkenwald, 1984). Cross, (1981); and
Darkenwald and Merriam (1982) have offered classifications or theories that examine barriers to participation. Their research has been based on two major national surveys of participation which were conducted by Johnstone and Rivera (1965) and Carp, Peterson and Roelfs (1974). Johnstone and Rivera (1965) identified two main categories of barriers. These were: 1) situational barriers in which influences external to the individual's control, such as lack of child care, transportation, money, etc. prevent the adult from participating, and 2) dispositional barriers, in which an individual's personal attitudes, abilities and motivations prevent the adult's participation. Carp, Peterson, and Roelfs (1974) (as well as Cross, 1981) identified an additional barrier, institutional, in which practices and procedures of the adult education institution are ones that may exclude adults from participation. (Institutional barriers might include inconvenient times of course offerings, attendance requirements, amount of time required to complete a program, etc.) Darkenwald and Merriam (1982) proposed informational barriers as a fourth barrier category; they found this category to be a separate and distinct barrier in their study. They defined informational barriers as
lack of communication between the adult educational institution and the potential learner.

Barriers to participation in adult education activities by older adults has also been the focus of some theorists and researchers' efforts. Romaniuk and Romaniuk (1982) cite research by others which has suggested the following barriers to participation in higher education exist for older adults: 1) lack of interest; 2) existing programs do not meet the needs of the older population; 3) lack of transportation; 4) poor health; 5) not enough time; 6) cost; 7) negative personal estimations of competence (ability to succeed) and lack of confidence.

Martindale and Drake (1989), using Darkenwald and Valentine's 1985 Deterrents to Participation Scale, studied reasons for nonparticipation in voluntary, off-duty education by Air Force enlisted personnel. They found that the following eight factors were deterrents to participation: 1) lack of course relevance; 2) lack of confidence; 3) cost; 4) time constraints; 5) lack of convenience; 6) lack of interest; 7) family problems; and 8) lack of encouragement.

Reasons for nonparticipation in the health professions are similar to the above research findings.
Scanlan and Darkenwald (1984) cite health professions-specific research by others that have identified barriers that include difficulty by physicians in obtaining practice coverage and allied health professions not being permitted release time from jobs. Scanlan and Darkenwald (1984), using a "Deterrents to Participation (DPS) Scale" that they developed, surveyed 750 allied health professionals and found, for the 479 respondents, six factors (disengagement, cost, family constraints, benefits, quality and work constraints) that provided "empirical evidence to support a multidimensional perspective on the deterrents construct, the underlying structure of which was found to be more complex than suggested by earlier intuitive formulations" (Scanlan and Darkenwald, 1984, p. 164). They also found that many items which Cross (1981) and others had grouped under the "situational" barrier were, in fact, three distinct variables (occupational deterrents, family deterrents and cost deterrents). "Lack of benefits" also was shown to be distinct from the institutional barrier. Five of the six factors in Scanlan and Darkenwald's analysis were highly predictive of participation/nonparticipation in educational activities in the allied health field. In the field of Medical Record Administration, Hancock
(1983) conducted the only survey on barriers to participation in a nontraditional medical record administration program. Her findings were that there were "few barriers serious enough to prevent accredited record technicians from enrolling in school" (Hancock, 1983, p. 65). Situational barriers were found to be the most serious in preventing career progression. Dispositional barriers and institutional barriers were found to be the least serious threats to participation for her subjects. (It should be noted that Hancock's results might have been biased by her choice of a sample of those ART's who were actively involved in corresponding with the university which they hoped to attend.)

Summary

Reasons for participation/nonparticipation in adult educational activities constitute a complex area of investigation. Two methods of studying participation (i.e. examining reasons for participation and reasons for nonparticipation, i.e. barriers) have been found to be useful in understanding why adults engage, or do not engage, in adult educational learning activities. Major research on participation in adult education has focused on various groupings of motivational factors and on
reasons for participation by subgroups of adults such as older adults and adults in health professions. It has been found that both motivational factors and barriers, in part, are multidimensional in nature and that future research efforts need to focus on examining the complexity of these factors.

While it is useful to look at the literature on adult participation/nonparticipation in adult learning activities from the standpoint of the above discussed motivations and barriers, very little research in adult education and particularly medical record administration education, has concentrated on examining personality characteristics as reasons for participation/nonparticipation in educational activities. The following section discusses personality theory and its relationship to participation and persistence.

**THE CONCEPT OF PERSONALITY**

The concept of personality is useful in defining the internal states of persons. These states (traits, temperaments, dominant needs, skills, etc.) are usually consistent from situation to situation and stable or enduring in quality (Organ and Bateman, 1986). The empirical study of personality allows the researcher to choose a concept or construct that is useful in
describing individual differences. Epstein (1980) has found that, while personality measures seldom predict one behavior, they predict average behavior very well over certain periods of time. Personality measures, then, are useful in predicting trends in behavior over time.

Two ways to measure personality are through motive-based and belief-based approaches. Two theories, achievement need (a motive-based approach) and locus of control (a belief-based approach), described as theoretical bases for this study, are presented in terms of an individual's participation and persistence in tasks that are undertaken.

Achievement Motivation and Participation and Persistence

The Background of Achievement Motivation Theory

Fineman (1977) has traced the background of the achievement motivation construct. He explains that William James (1890, cited in Fineman, 1977), in his psychological writings, first mentioned the importance of man's quest for achievement. He stressed that man's self-regard is often determined by his self-imposed goals. When these goals are achieved, he experiences feelings of well-being. When these goals are not realized, he experiences frustration and suffers humiliation. Murray (1938, cited in Fineman, 1977) is
credited with development of the manifest needs theory (needs-press model), and with formalizing the achievement motivation construct. He provided a basis for the development of achievement motivation theory and originated the Thematic Apperception Test (TAT) which was the first instrument to permit measurement of achievement motivation. (In 1977, Fineman traced twenty-two instruments which measure achievement motivation. From 1977 to date it is probable that other instruments have also been developed.) From his study of fifty young men, Murray developed a taxonomy of personal needs which he defined as hypothetical constructs that reflect physiological motives which direct one to behave in certain ways. One main motive was termed the "need for achievement" (abbreviated as nAch) and was defined as:

the desire or tendency to do things as rapidly and/or as well as possible ... to accomplish something difficult. To master, manipulate and organize physical objects, human beings or ideas. To do this as rapidly and independently as possible. To overcome obstacles and obtain a high standard. To excel one's self. To rival and surpass others. To increase self-regard by the successful exercise of talent.

(Murray, 1938, p. 164 cited in Fineman, 1977)

McClelland (1951, 1955), building on Murray's theory base and TAT development, concentrated on the content (affect) of the response generated from the TAT rather than on the psychological process that produced the
content. He defined achievement motivation as a positive or negative affect that was exhibited in instances in which an individual competes with a high standard. McClelland, Atkinson, Clark, and Lowell (1953) developed a system that allows researchers using the TAT to measure individual difference in achievement motivation. Subcategories of achievement are scored and the sum of the subcategory scores permits an assessment of the strength of the individual's achievement needs.

As a basis for their theory of achievement motivation, McClelland, et al (1953) present the following four models to describe and explain possible sources of motives for behavior: 1) survival model, 2) stimulus-intensity model, 3) stimulus pattern model, and, 4) affective arousal model. It is this last model that the authors support and offer as one which explains motives. Positive or negative affective arousal stems from satisfaction or frustration, respectively, and is the result of interaction of external situations with the individual's expectations of the result. The achievement motive, is "learned when particular affects or the expectancy of experiencing these affects come to be associated with particular situational cues" (Heckhausen, Schmalt, and Schneider, 1985, p. 16).
Atkinson (1957, 1964) and Atkinson and Feather (1966) continued to develop a formal theory of achievement motivation. In his analysis of conditions that precede achievement behavior, Atkinson looked not only at the motivation to achieve, but also at the motivation to avoid failure. In Atkinson's achievement motivation theory, both motivations determine whether a person will approach or avoid a particular achievement task. Atkinson bases his two-pronged theory on Vroom's expectancy-value theory of motivation in which motives are a function of two situational variables; perceived expectancy of success and perceived valence of the activity. Atkinson's theory of achievement motivation suggests that there are two motives: the motive to approach success (which results when the motive to approach success is greater than the motive to avoid failure - Ms > Maf) and the motive to avoid failure (which results when the motive to avoid failure is greater than the motive to approach success - Maf > Ms). Atkinson predicts that "the strength of the motivation to perform a task when no alternatives are offered and when the individual is constrained should be greatest when the expectancy (or Ps - the subjective probability that the act will have as a consequence the attainment of an
incentive) is .50" (Atkinson, 1966, p. 18). Atkinson hypothesizes that individuals who possess a high need for achievement will be motivated most by tasks that are intermediate in difficulty level. When tasks are more difficult or less difficulty (than an intermediate level of difficulty) motivation to approach success is lower. It is hypothesized that individuals in whom the motive to avoid failure is stronger than the motive to approach success will avoid tasks that are of intermediate difficulty (in which the individual's anxiety about failure is more aroused) and will choose either easier or more difficult tasks because his "avoidant motivation" is lowest when performing these tasks. Other researchers have since revised the second part of the theory concerning motivation to avoid failure in which Atkinson theorized that motivation to avoid failure might serve to spur on achievement-related activities. Later researchers have conjectured that motivation to avoid failure inhibits the undertaking of activities rather than specifies which activities are likely to be undertaken. In other words, when the motive to avoid failure is greater than the motive to approach success, the individual will avoid tasks that are achievement-related (unless he receives other external sources of
positive motivation) and resistance will be greatest when
$P_s$ is .50.

Heckhausen (1967, cited in Fineman, 1977) has termed Atkinson's two motivational tendencies "hope of success" and "fear of failure". He defines hope of success as "the striving to increase or keep as high as possible, one's own capability in all activities in which a standard of excellence is thought to apply and where the execution of such activities can, therefore, either succeed or fail" (Heckhausen, 1967, pp 4-5, cited in Fineman, 1977).

Three factors are relevant in Atkinson's achievement motivation theory for a person to approach an achievement related goal. To display the tendency for success these include: 1) the need for achievement (or the motive for success) which is considered to be a relatively stable, personality characteristic; 2) the subjective probability that the task will be completed with success, and 3) the incentive value of success.

Similarly, three factors are relevant in Atkinson's achievement motivation theory for the tendency to avoid failure. These include: 1) the motive to avoid failure (usually measured by an anxiety-type questionnaire), 2) the subjective probability of failure; and 3) the
incentive value of failure. Typically, using Atkinson's definition of achievement motivation, in order to obtain an achievement motivation score, scores for the tendency to seek success (TAT measure) and the tendency to avoid failure (different measures) are combined (Atkinson and Raynor, 1974).

Refinement of Achievement Motivation Theory

Other theorists and researchers have built upon McClelland's and Atkinson's formalized achievement motivation theories. Raynor (1974) suggested that future orientation may have an influence on current achievement behavior. Raynor thus linked the immediate feedback (success or failure) and the perceived probability of success in the task to achievement of long-term success or failure. Raynor used the term "contingent/noncontingent path" to describe this extension of achievement motivation theory.

Horner (1968; 1974), concerned with the inconsistencies in measures of achievement motives between men and women, theorized that women, unlike men, have a motive to avoid success. The motive to avoid success becomes apparent in women in achievement situations and is manifested by anxiety about achieving success in situations in which it is "desirable" to
maintain a woman's stereotypical social role. Women who display the fear of success are anxious because they fear social rejection by women and by men, especially, and because they fear that they will lose their femininity because of achievement in such masculine-oriented areas as intellectuality and leadership.

**Persistence as a Motivational Phenomenon - The Relationship Between Achievement Motivation and Persistence**

Much research has been devoted to achievement motivation and persistence in an activity. Research in the area of persistence can be grouped into three study categories (Feather, 1966). The first category looks at persistence as a trait or underlying behavior. Correlations are sought between persistence scores, which are usually measured in length of time an individual persists at various tasks. Consistency in behavior from one task to other tasks is sought. Environmental or situational variables are not considered. The second category of research looks at resistance to extinction in individuals as a means of measuring persistence. The number of trials that the individual exhibits before extinction are measured. In this category of studies, situational factors are inherent and influence the
studies. The third category of studies include those which examine persistence as a motivational phenomenon. It is in this category that the theory of achievement motivation falls. In this category, both the individual and the situation are expected to influence the outcome. Atkinson (1957), Atkinson and Feather (1966) and Feather (1966) provided early definitive work on achievement motivation in relation to persistence as a motivational phenomenon. Atkinson's theory of achievement motivation (1966) suggests that initial strength and changes in motivation are a result of the individual's decreasing expectation to succeed during tasks in which he continually faces failures. Feather (1966) defines the persistence situation as:

that in which a person is confronted with a very difficult or insolvable task and is unrestricted in either the time or number of attempts he can work at it. He is unsuccessful at each of these attempts at the task, but can turn to an alternative activity whenever he wishes. Persistence may be measured by the total time or total trials which the person works at the task before he turns to the alternative activity. The former measure is sometimes referred to in the literature as temporal persistence; the latter measure is analogous to resistance to extinction.

(Feather, 1966, p. 49)

The literature on achievement motivation and persistence shows a general pattern of individuals who are high in the need for achievement (nAch) persisting
longer on problems/tasks than individuals low in nAch. High nAch individuals appear to know when to stop pursuing a goal; they quit sooner on fruitless tasks than do low nAch individuals because they seem to realize their limits earlier.

Feather, (1960) basing his study on Atkinson's theory of achievement motivation, found that those individuals in whom the motive to achieve success is stronger than the motive to avoid failure were more persistent at a task when their subjective probability of success was higher than when their subjective probability of success was low; 2) when the motive to avoid failure is greater in an individual than is the motive to succeed, the individual was more persistent when his initial probability of success was low than when his initial probability of success was high; 3) when the initial probability of success was high, individuals in whom the motive to achieve success is greater than the motive to avoid failure were more persistent than individuals in whom the motive to avoid failure was greater than the motive to achieve success; and, 4) when the initial probability of success was low, individuals in whom the motive to avoid failure was greater than the motive to achieve success were more persistent than
individuals in whom the motive to achieve success was greater than the motive to avoid failure.

Feather also addressed the issue of interaction of personality dispositions as well as situation influences on persistence. He specified the level of difficulty of the alternative task in the second of his studies. As in his earlier study, those who had the motive to achieve success stopped performing the task earlier than did those who had the motive to avoid failure when the task was described as very difficult with a 5% success probability (i.e., it was an insolvable task). Feather concluded that the higher the subjects initial expectation was for success the longer these individuals remained with the first task. Nygard (1977 cited in Heckhausen, Schmalt, and Schneider, 1985), in a post-experimental analysis of Feather's work, displayed a similar result for those with the motive to avoid failure. He found that individuals with high success motives persisted longer at a task that was of medium difficulty but the more these individuals feared failure, the sooner these individuals changed to a task that had been defined as easy. However, when an easy initial task was presented, and an alternate task was rated as moderately difficult, both girls and boys with a high
failure motive tended to display persistence while both girls and boys with high success motives displayed less persistence. In these studies, persistence was determined by personality and situational factors that interacted.

Atkinson and Litwin (1966) tested the hypotheses that individuals in whom the motive to achieve success is stronger than the motive to avoid failure will work for a longer time on a final examination and will choose tasks that are considered "intermediate" in difficulty level. Both hypotheses were supported. Other studies, that concentrated on samples of children, confirm the findings that those high in nAch tend to persist longer than those low in nAch, or that they quit sooner when they realize that the task is not able to be accomplished. (Campbell and Henry, 1981; Ollendick, 1974).

Achievement motivation and persistence at the college level was studied by Alexander (1976), Ashbaugh, Levin and Zaccaria (1973), and Hamilton (1975). The results of Alexander's study support Atkinson's achievement motivation theory. The conflicting study by Ashbaugh, et al. focused on disadvantaged college students. They found that nAch was not associated with persistence. Hamilton's study, while finding a
relationship between the nAch measure used and persistence, concluded that the instrument is related to achievement behavior but measures a psychological characteristic that differs from McClelland's achievement motive. Molstad (1981), in a more recent study of adult women returning to college, found that achievement motivation was not a significant predictor of persistence on psychomotor tasks.

Achievement Motivation and Participation

The basis for studies relating achievement motivation and participation in activities are early studies which indicated that those high in achievement motivation were more willing to align themselves with high status targets (Mehrabian, 1968, 1969). Those high in nAch have also been shown to be more willing to approach achievement-related tasks (Weiner and Potepan, 1970). Mischel (1961) has found that those high in nAch have a better ability for delaying gratification. Teevan and Yalof (1972), state that some researchers have demonstrated that there is a trend for individuals high in achievement motivation to volunteer for situations that allow them to test their abilities. All of these qualities indicate a willingness to participate or involve oneself in an activity.
Literature on achievement motivation and participation in an activity is not substantial. Reid and Cohen (1973) studied achievement motivation in relation to the choice between degree and certificate courses in colleges of education in Great Britain. They found that individuals with a high need for achievement were more attracted to the B. Ed. degree program rather than certificate courses offered by colleges of education.

Feij (1975; 1976) studied fear of failure and reluctance to participate in psychology research in both male and female students respectively and found that in male students, those with high levels of negative fear of failure ("debilitating anxiety") tended to respond later than those with lower levels of negative fear of failure. In his study of females, there were not significant differences between the individuals who contacted the experimenter during the two day period and the individuals who did not contact the experimenter. However, time of responding was found to be positively correlated with debilitating anxiety. Research concentrating on achievement motivation as a reliable predictor of sports participation was conducted by Birrell (1977) and reported results indicate that there was not a strong
relationship between achievement motivation and athletic participation.

Summary

Achievement motivation theory, originally developed by McClelland (1951, 1955) has been defined as the need to achieve in achievement-related activities. Such personality characteristics as performing tasks rapidly, to a certain standard of excellence, accomplishing difficult tasks, working independently, and showing an inclination to participate in achievement-related tasks and persist in these tasks to goal completion have been associated with the achievement motive. McClelland's development of the TAT instrument helped to measure achievement motivation. Atkinson (1957, 1966) added to achievement motivation theory by looking not only at an individual's need to achieve but also at his/her need to avoid failure. Other researchers have offered modifications to achievement motivation theory that help to explain the relationship between the need to achieve and long term goals, (Raynor, 1974) as well as applying the theory to women, in particular (Horner, 1968; 1974). Achievement motivation theory has generally been found to predict persistent behavior in task-related activities.
and has been somewhat less predictive of participation in activities.

A second personality theory, locus of control, will be examined in the next section of this study.

LOCUS OF CONTROL AND PARTICIPATION AND PERSISTENCE

Social Learning Theory and Locus of Control

The personality construct of locus of control has much bearing on an individual's actions or behaviors. Locus of control was conceived initially, as a mediating variable which affects learning (DuCette and Wolk, 1973). This construct explains an individual's underlying belief system and describes the degree to which an individual believes that his actions are able to influence his outcomes. The following conceptual definition of internal-external locus of control is accepted and used as a basis for this study:

The internal locus of control is defined as the perception that an individual has of being able to influence the occurrence of reinforcements around him by his behavior. In the same way, the external locus of control expresses the perception of an individual who believes that influencing reinforcement around him is not within his control. In other words it (locus of control) is the perception of being able or not being able to change the probability that a reinforcement might occur. (Peterson, 1987, p. 206)

In locus of control theory, "internals" are defined as those individuals who believe that their own
actions/behavior are effective in realizing their desired outcomes. "Externals", on the other hand, are those individuals who do not believe that there is a strong link between their own actions/behaviors and what eventually befalls them. Externals attribute their outcomes to chance, luck or other "external causes" such as powerful people or organizations. Both externals and internals differ, then, in their beliefs about whether positive or negative outcomes are contingent on their behaviors.

Locus of control theory is derived from Rotter's (1954) social learning theory. Social learning theory addresses how individuals make choices given a vast array of potential available behaviors. It allows one to predict actions/behaviors of individuals based on which behaviors have the strongest potential to occur. In social learning theory, an individual's actions can be predicted based on three variables: behavior potential reinforcement values, and expectancies. A reinforcement can be defined as anything that has an effect on whether a behavior will occur, the direction the behavior takes or the kind of behavior exhibited (Phares, 1976). Rotter defines value of a reinforcement as: "the degree of preference for any reinforcement to occur if the
The possibilities of their occurring were all equal" (Rotter, 1954, p. 107). The value of a reinforcement is determined by its strength relative to other anticipated reinforcements as well as by the expectancy that associated reinforcement will occur.

Expectancy can be defined as "the probability held by the individual that a particular reinforcement will occur as a function of a specific behavior on his part in a specific situation or situations" (Rotter, 1954, p. 107). Whereas reinforcement values are relative, expectancies are absolute. However, because expectancies constitute subjective probability, they are determined not only by an individual's objective past history but also by expectancies that have been generalized from related situations.

Behavior potential can "be defined as the potentiality of any behavior's occurring in any given situation ... in relation to any single reinforcement or set of reinforcements." (Rotter, 1954, p. 105).

The following formula (Rotter, 1954) states the relationship among expectancy, reinforcement value, and behavior potential and how these variables are used to predict goal-directed behavior:

\[ B.P_x.s_1.R_a = f(Ex, Ra, s_1 + R.V.a) \]  \hspace{1cm} (1)
The formula can be read as follows: "The potential for behavior X to occur, in situation 1 in relation to reinforcement a, is a function of the expectancy of the occurrence of reinforcement a, following behavior X in situation 1, and the value of reinforcement a" (Rotter, 1954, p. 108). Thus, according to this formula, a behavior potential is more likely when expectancy and reinforcement value are both high or when one is high and the other is moderately high than when both variables are low. The uniqueness of this formula, and therefore social learning theory, is that an equal emphasis is placed on reinforcement value, expectancy and the specific situation. In other learning theories, the value or motive end of the formulas are of prime importance. Social learning theory allows for the complexity involved in choice situations to be accounted for and helps to explain an individual's potential for shifting or changing behavior.

The above formula serves to predict specific "molecular" bits of behavior rather than more global classes of behavior. It exists within a broader conception which helps to explain locus of control and its place within social learning theory. Rotter's (1954)
more general formula serves to explain these broader classes of behavior more fully and is stated as:

\[ N.P. = f(F.M. \& N.V.) \] (2)

This formula can be read as "The potentiality of occurrence of a set of behaviors that lead to the satisfaction of some need (need potential) is a function of the expectancies that these behaviors will lead to these reinforcements (freedom of movement) and the strength or value of these reinforcements (need value)" (Rotter, 1954, p. 110). The term freedom of movement assists one in the placement of the locus of control construct within social learning theory.

Freedom of movement can be defined as:

the mean expectancy of obtaining positive satisfactions as a result of a set of related behaviors directed toward the accomplishment of a group of functionally related reinforcements. A person's freedom of movement is low if he has a high expectancy of failure or punishment as a result of the behaviors with which he tries to obtain the reinforcements that constitute a particular need. (Rotter, 1954, p. 194)

Freedom of movement can be seen as a generalized expectancy of success based upon previous behavior and outcome sequences. Freedom of movement includes not only the likelihood of success but the generalized expectancy for internal versus external control of reinforcement.
The locus of control construct has become useful in predicting not only highly specific, lower level (attentive) behaviors, but general, high order (cognitive) behaviors as well. The following section will describe research on the locus of control construct and its implications for participation and persistence.

Locus of Control and Participation

One obvious implication of the locus of control construct is that those who have a higher expectation that their behaviors can affect their own outcomes will exhibit increased behavior that is directed toward reaching described outcomes. Participation in activities, whether these activities are political, athletic, educational or otherwise, can be viewed as a goal-directed behavior, i.e., a behavior that will assist an individual in achieving a desired outcome. Much research in the area of locus of control as a predictor of participation in various activities has been conducted and the results of this research are somewhat contradictory.

Locus of Control and Political Participation

Phares (1976), in a review of research on participation in civil rights activities and political and social action, has found that research on
participation in social and political activities is less consistent than previous research in locus of control. Phares reported studies by Gore and Rotter (1963) and Strickland (1965) using black populations as study groups. Gore and Rotter (1963) studied students in a southern black college and their willingness to participate in different types of social action behaviors. They found that those students who had higher internal scores indicated a more active commitment toward civil rights behavior. The problem with this study was that it measured willingness to participate, rather than the actual behavior of participation. Strickland (1965), in a study of blacks who had demonstrated participation in civil rights activities, found that these individuals were significantly higher in internal scores than were blacks who did not participate in these activities. Other studies reported by Phares did not support the relationship between internality and participation in civil rights activities.

Phares (1976) reported on studies on participation in political activities that followed earlier studies on civil rights activity participation. One study found that political participation in college males was positively correlated with an internal locus of control.
Other studies failed to find a positive relationship between internality and political participation or social action.

Some explanations have been offered to explain the contradictory results from research on locus of control and political participation. Deutchman (1985) suggests that generalizability of results from Gore and Rotter's (1963) and Strickland's (1965) studies can be questioned due to the sole use of black subjects. Phares (1976) also states that the populations that have been studied differ in ways other than race (i.e., students versus nonstudents, time frames studied and different locus of control measures used). Deutchman (1985) cited research by others that contends that the Rotter Internal-External scale is ideologically contaminated. External items are more linked with liberal ideology because they are interpreted as linking environmental conditions with the determination of behavior. Internal items are more linked to conservative behavior because they are interpreted as consistent with the Protestant work ethic.

In a recent research effort, Deutchman (1985), using Rotter's I-E Locus of Control Scale with high school students and church-affiliated individuals, found a link between internal control and political participation.
Deutchman found a far more significant relationship between internality and voting as compared to other forms of political participation.

In summary, regarding locus of control and participation in political activities, it can be seen that there are various results of research efforts. Phares (1976) cited the diversification in populations used, the differing frames, the various types of locus of control measures, different procedures and the varieties of social and political participation as impediments to obtaining clear cut findings in this area.

Locus of Control and Participation in Other Activities

Participation in activities other than political and social activism also have been the focus of research efforts. DiGiuseppe (1973) and Gilliland (1974) studied participation in athletics on both the high school and college levels, respectively and found that there was no correlation between internal control and participation in athletics. Previous research supports the correlation between internality and sports/team participation.

Collins and Taylor (1976) found no significant differences between participants, noncompleters, nonparticipants, and a control group in an Upward Mobility Program. This program consisted of counseling
and evaluation efforts. Participation in the program was used as an indicator of goal-directed behavior.

Studies have also been conducted on locus of control and participation in weight reduction activities. Paine, O'Neil, Malcom, Sexauer, and Curry (1980) conducted three studies on adult women to examine the relationship of experienced control to participation in weight reduction treatment. Paine, et al found in two of the studies that high levels of experienced control over internal stressors were associated with increased efforts to begin treatment (participate in obesity treatment) and to complete treatment.

Locus of Control and Participation in Educational Activities

Research findings in the area of locus of control and participation in educational activities have also displayed contradictory results.

Falconer (1974) studied lower and middle classes, black and white races, urban and rural/suburban dwellers, and educated and undereducated men and women to determine if, among other variables, general and specific loci of control were related to degree of participation in learning activities. He found that general and specific locus of control variables, which he measured by the use
of the I-E Control Scale and the modified IAR instrument, were not reliable predictors of the degree of participation in learning activities.

Levine and Taub (1979) examined locus of control and student participation in a college admission procedure. They found that individuals who had an internal locus of control chose a college admission procedure which allowed more personal involvement than traditional college admission procedures.

Gemmill, Bustoz, and Montiel (1982) studied approximately 700 Mexican American and Anglo students in the ninth, tenth and eleventh grades who were considered to have superior mathematical ability to identify factors that affected which mathematics courses these students planned to take. Those individuals with an external locus of control were considering enrolling in fewer courses than the internally-oriented students.

Studies relating locus of control and participation in educational activities at the college level were conducted by several researchers. Adkins (1981) studied locus of control and participation/nonparticipation in continuing education at the college level. She found that there were no significant differences between adults enrolled in continuing education noncredit courses and
adults enrolled in continuing education credit courses on the locus of control measure. Both groups were found to be "internals". Drobnies (1984) also studied college level participation in her study of older adult participants and nonparticipants in a higher education program that granted academic credit. No significant differences were found between the participants and nonparticipants on the locus of control variable.

Two recent studies conducted by Giles (1985) and Dolphin (1986) examined locus of control and participation in continuing education for engineers and nurses, respectively. Giles found that engineers with a high internal locus of control could be expected to be more active in their pursuit of learning experiences to maintain their technical competence. Engineers who had an external locus of control were found to be less predictable in their efforts to pursue participation in continuing professional education. Dolphin found that nurses who participated in continuing nursing education were significantly more internal than nurses who did not participate in this education effort.

Summary

The results from studies on locus of control and participation in various activities are contradictory.
It appears that study outcomes could be dependent on moderating variables inherent in the studies or use of a particular locus of control instrument. Some studies do, however, indicate that there is a relationship between locus of control and participation in an activity. The following section will examine the relationship between locus of control and persistent behavior.

**Locus of Control and Persistence**

Willingness to delay gratification (or persistence) has been found to be generally characteristic of those individuals who possess an internal locus of control. Deferring immediate rewards and delaying gratification in many situations allows an individual to gain mastery over his environment or to obtain his ultimate goals and has been found to be associated with individuals who are internal in their control orientations. Externals, on the other hand, have been found to have low persistence and shifts in level of aspiration (DuCette and Wolk, 1972). These individuals find it hard to delay gratification and defer immediate rewards. In the area of academic achievement, these generalizations have been found in research with children; later research efforts have studied adult populations and findings have been similar.
Bialer (1961), conducted one of the earlier studies of locus of control and persistence in a child population. In his study of normal and mentally retarded children, he found a correlation between internal control orientation and the choosing of a delayed, more valued reward rather than a reward that was offered sooner but was not as valued.

Zytkoskee, Strickland and Watson (1971) found that black ninth-graders were more external and less persistent (less likely to delay gratification) than white ninth-graders; however, use of white experimenters with black subjects may have biased the results of the experiment. Strickland (1972), in an attempt to correct deficiencies in Zytkoskee, Strickland and Watson's study, conducted a similar study of both white and black children using both white and black experimenters for each racial group. Although no relationship between loci of control and persistence behavior was found for blacks, white subjects who were internally-oriented showed persistent behavior by choosing delayed rewards more often than did white subjects who were externally-oriented. Strickland (1973) next attempted to control for race and socioeconomic status and found that for
white, middle-class males and females, internal control orientations were highly related to persistence behavior or willingness to delay gratification.

Lefcourt (1972) made the generalization that individuals with more education, who are more achievement-oriented, and individuals who are less deprived from racial groups appear to be more internal in their beliefs and also show more persistence through their willingness to delay gratification. He criticized early research efforts for the following reasons: 1) studies usually concentrated on children and 2) subjects in experiments were asked to merely "wait rather than to persist in some effort directed toward a valued end. Such waiting for what are often undeserved rewards may be more related to the ability to restrain one's momentary impulses than to the willingness to commit oneself to long-term efforts directed at distant goals" (Lefcourt, 1972, p. 72).

Mischel, Zeiss and Zeiss (1974) tried to address these criticisms of research by measuring locus of control separately as positive (I+) and negative (I-) events. Mischel, et al related locus of control in preschool children to situations in which the children were 1) asked to wait passively for a reward, 2) asked to
become involved in activities that would be instrumental in producing the reward during the waiting period, and 3) asked to indicate desire for an immediate reward. Findings of their studies indicate that:

I+, but not I-, was found to be related to persistence in three separate situations where instrumental activity would result in a positive outcome; I- but not I+, was related to persistence when instrumental activity could prevent the occurrence of a noxious outcome. When the same situation was structured so that instrumental activity would not affect the outcome, persistence on the task was related negatively to I-.

(Mischel, Zeiss and Zeiss, 1974, p. 265) Their conclusion was that "there is an association between internal and external control and delay behavior (or persistence measures) only when the subject's delay behavior is structured as instrumental in attaining the desired but delayed contingent outcomes" (Mischel, et al, 1974, p. 277). In this research, Mischel, et al provided an early attempt to specify moderating conditions in the study of locus of control and persistence.

Subsequent studies of the relationship between locus of control and persistence in child populations have tended to support earlier research efforts linking locus of control to persistence. Gagne and Parshall (1975) studied rural low socio-economic status (SES) boys and found that internals as compared to externals displayed
greater persistence at learning digit spans. Goal setting was found to increase persistence of internals but not externals. Finch, Kendall, Deardoff, Anderson and Sitarz (1975) studied emotionally disturbed children and found that locus of control was related to externals being more impulsive in their cognitive tempo (i.e., they responded more quickly, rather than persisted in order to consider all available alternatives). They concluded that persistence behavior is related to the dimension of reflection-impulsivity but there are other variables involved that might affect this relationship. Gordon, Jones and Short (1977) in their study of third and sixth grade boys and girls, found that the effects of locus of control on persistence time differed by sex and age of the child and these were found to be moderator variables in the relationship between locus of control and task persistence. Skill and chance instructions were not found to be related to persistence time.

Locus of Control and Persistence in Older Populations

Most of the research conducted on locus of control and persistence in populations older than children consists of studies of college-aged subjects. Findings from research on college-aged subjects are mixed; it appears that other variables may moderate the effects of
locus of control on persistence behavior. Dhawan and Singh (1985); McGrath and Pirot (1980); Prociuk and Breen (1977); and Thurber, Heacock, and Peterson (1974) have found that individuals with an internal orientation show more persistent behavior than do externals. Prociuk and Breen (1977) examined the relationship between locus of control and information seeking (indicative of persistent behavior) in college academia. They found that internals more actively seek and acquire information that is pertinent to the college academic situation than do externals. Evans (1982) split the locus of control measure into four groups: nondefensive (congruent) internals, defensive internals, nondefensive externals, and defensive externals. He found that internals and defensive externals persisted longer on a skill task than congruent externals. Externals, however, persisted longer than did internals on chance tasks. Dhawan and Singh (1985) found that although internals were more persistent than externals in easy task situations, this relationship was not found for difficult task situations.

Several studies failed to uphold the relationship between locus of control and persistence in college-aged individuals. Becker (1975) found that the Rotter Internal-External scale did not differentiate between
persisters and nonpersisters while another investigated scale did. Littig and Saunders (1979) found that locus of control was not related to time spent or number of attempts made to solve puzzles. They did, however, find that willingness to return to the task was strongly related to a skill set for internals and to a chance set for externals. Alexander (1976) found that although achievement motivation was positively related to persistence, locus of control was not found to be related to this measure. Starnes and Zinser (1983) found that neither locus of control nor sex was related to task persistence in the attempt to solve a problem.

Few studies of the relationship between locus of control and persistence have been conducted using adult populations (other than college-aged). Trice and Wood-Shuman (1983) studied adults aged 24 to 45 years of age who enrolled in extension courses at a university. They found that locus of control affected persistence across instructions (under both normative and maximal instructions); maximal instructions served to increase persistence among internals and discouraged persistence among externals. Spitzer (1985) in his study of adult part-time learners, found that adult learners who exhibited the highest tendency to persist were
externally-oriented. This finding is contradictory to many other findings that link internal locus of control and persistence.

**Summary**

Locus of control appears to be a somewhat helpful predictor when persistence is measured in terms of persistent or goal-directed behavior. This finding has been somewhat consistent for both child and adult populations.

**Changes in the Locus of Control of an Individual**

Locus of control, because it is based on the belief system of the individual, is not a stable personality characteristic or trait of an individual. Locus of control can change through the natural and accidental occurrences of age and exposure to environmental experiences, etc., as well as through the deliberately contrived methods of counseling/training efforts (Lefcourt, 1976). Since it appears that there is some link between an individual's locus of control and participation in an educational activity and there is a stronger link between locus of control and persistence in an educational activity, it would appear beneficial to assist individuals involved in educational activities in changing their locus of control orientations to ones that
are more internal. The following section discusses literature that relates to changing locus of control in individuals.

Locus of Control and Age

Generally, locus of control beliefs have been found to shift to more internal levels up to certain ages. Rykman and Malikiosi (1975) generally replicated Lao's (1974) findings which demonstrated that internal control increases from early childhood to the thirties, levels off during the middle years, and does not decrease greatly in the elderly. This increase in internality is explained by the fact that as individuals mature, they undergo more experiences which enable them to become more competent and effective in their environment and this leads to feelings of increasing control. At the university level, Behuniak and Gable (1981), in a study of changes in locus of control and self concept over time for persisters and changers in six college majors, found that in three of the six majors, students became increasingly more internal as they approached graduation and in two of the six majors there were overall increases in internality but not a steady progression. Sadowski, Loftus-Vergari and Davis (1978) also studied college-aged students. They compared nontraditional college students
(aged 25 years or older) to traditional college-aged students. Nontraditional males were found to be more internal than traditional males on two of the three subscale factors.

Another variable which relates to the relationship between age/maturation and increased internality is the passage of time. Andrisani and Nestel (1976) found that "there is evidence that advancement in occupational status . . . , advancement in annual earnings . . . , and reentry into the labor force . . . are systematically related to increasing internal locus of control" (p. 162). It is clear that, as a person matures to adulthood, mental age, chronological age and the passage of time are facilitating factors in enabling individuals to view themselves as being more in (than out of) control of events occurring in their lives.

A consensus does not exist regarding the relationship of age to locus of control for younger versus older adults. Hale and Cochran (1986) reviewed the literature in their study on locus of control and adults as they age. Some researchers conclude that older adults are more internal than younger ones (Wolk and Kurtz, 1975). Other researchers conclude that there is a decrease in internality as adults age (Box and Peck,
1981; Bradley and Webb, 1976; Hale and Cochran, 1986; Molinari and Niederhe, 1984-85). Other researchers have not found differences between younger and older adults (Lao, 1974; Ryckman and Malikiosi, 1975).

Weisz and Stipek (1982) in a comprehensive meta-analysis of thirty-three developmental studies that used twelve different locus of control scales, found that a few studies showed age-related declines in perceived control, approximately half of the studies demonstrated consistent age-related increases in perceived control and approximately half of the studies showed mixed results or no significant differences. Weisz and Stipek examined the twelve locus of control scales used in the thirty-three studies and found that "some developmental findings may be artifacts of scale characteristics, and that others may reflect developmental effects of constructs other than perceived control. Most importantly, the scales and the LOC literature fail(ed) to distinguish clearly between two dimensions of perceived control that may show quite different patterns of developmental change" (p. 250). Specifically, Weisz and Stipek found that "most, but not all, evidence from agree-disagree scales shows internality increasing with development, while most evidence from choice of attribution scales
indicates that internality does not increase with development" (p. 260). These researchers offer a two-dimensional conceptual framework that includes perceived contingency of outcomes and perceived competence of self as separate elements which more clearly help to explain the relationship between age and locus of control.

**Changing Locus of Control Through Contrived Experiences**

Deliberately contrived attempts at changing an individual's locus of control have been found to be successful (Lefcourt, 1976). Psychotherapy, behavior modification, and other counseling techniques have been used to effect a change in the direction of internality in an individual's locus of control.

DeCharms (1968) proposed a theory of origin-pawn which addressed personal causation in individuals and subsequently researched whether direct intervention (in the form of a week-long residential motivation training session and exercises to be used during the year in teachers' classrooms) would have an effect on whether teachers and students thought of themselves as origins. He found that personal causation training has positive effects on the motivational behavior of individuals.

Although DeCharms' origin-pawn theory is not the same as locus of control, concepts similar to his
findings have been applied to the locus of control construct. Reimanis (1971, cited in Phares, 1976) attempted to change locus of control in several studies, including first and third grade elementary children, and community college students. In the experiment with children, Reimanis used weekly meetings with teachers to assist them in modifying classroom procedures so that children were encouraged to develop more internal control. With the college-age population, he used individual counseling sessions to change students' locus of control. In both studies, changes in locus of control in the direction of internality were found. Lefcourt (1976) reports on other research that has shown positive results (i.e., shifts to more internality) using behavior modification and psychotherapy intervention techniques.

Few studies have examined adult college-age students and changes in their locus of control orientations. Dowell (1977), suggests applications of techniques aimed at changing locus of control in non-traditional students. Roueche, Mink and Abbott, (1976) found that students became more internal after receiving individualized instructions than did students who received traditional instruction. These researchers went on to study students from a large number of community colleges to determine
the effects of self-paced traditional instruction and composite and traditional counseling on locus of control orientation shift of students. The counseling strategy they suggest uses a multi-phased approach in which the instructor, who acts as the counselor, helps the student to focus on the desirable behavior and its positive outcomes; asks the student to identify outcomes (consequences) of his behavior and to examine his own desires for the behavior; permits the student to carry out the behavior, with no punishment (or failure); and helps the student link his behavior to its causes (namely the internally controlled event) through a continuous and, later on, an intermittent reinforcement schedule. Evaluation by the student of how he did in relation to success criteria is encouraged. It has been found that group involvement in the reinforcement process (i.e., peer support and recognition) assists the social learning process and thus helps to facilitate the change of control orientation.

Summary

It has been shown that since locus of control is not a stable personality characteristic; it is amenable to change through naturally occurring events such as age, maturation, the passage of time, and environmental
experiences and through artificially contrived methods such as behavior modification, counseling, training, or other therapeutic efforts. While there is general agreement that locus of control can change with age, there is little consensus as to the direction (i.e., internal vs. external) of the change. Various explanations have been offered to support findings in both the external and internal direction. Behavior modification, counseling, training, and therapy have all been proven to be successful in effecting change in individuals' locus of control orientation.

The next section of this chapter examines the relationship between the two personality constructs of achievement motivation and locus of control.

THE RELATIONSHIP BETWEEN ACHIEVEMENT MOTIVATION AND LOCUS OF CONTROL

Although many studies have been conducted to explain the relationship between locus of control and achievement, (defined as achievement-related behaviors, such as high grades, participation in achievement-oriented activities, etc.) fewer studies have been conducted which assess the relationship between locus of control and the need to achieve. This section will first examine the literature on the relationship between locus
of control and achievement and will then present research findings on the relationship between the need to achieve and locus of control.

**Locus of Control and Achievement-Related Behavior**

Lefcourt (1976) provides a rationale for the relationship between locus of control and achievement-related behavior:

The link between locus of control and cognitive activity appeals to common sense. In like fashion, common sense suggests that a disbelief in the contingency between one's efforts and outcomes should preclude achievement striving. Without an expectation of internal control, persistence despite imminent failure, the postponement of immediate pleasures, and the organizing of one's time and efforts would be unlikely. Common sense would dictate that these characteristics, essential to any prolonged achievement effort, will occur only among individuals who believe that they can, through their own efforts, accomplish desired goals; that is, individuals must entertain some hope that their efforts can be effective before one can expect them to make the sacrifices that are prerequisite for achievement.

(Lefcourt, 1976, p. 66)

Scholastic achievement has been the area that has been most researched in terms of relating the student's locus of control to achievement-related behavior. Previously, it was thought that intelligence was related to scholastic achievement. Achievement motivation theory (McClelland, Atkinson, Clark and Lowell, 1953) partially discredited the belief that a high level of intelligence was necessary for high scholastic achievement and focused
attention on the fact that certain personality characteristics could be useful in predicting academic (as well as other types of) achievement.

In 1966, the Coleman Report (Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld, and York, 1966) served as the first major impetus to spur on investigation in the area of locus of control and academic achievement. The researchers found that when nonwhite children possessed beliefs that their academic outcomes were related to their efforts, they performed at higher scholastic levels than nonwhite children who did not hold these beliefs.

Crandall, Katkovsky, and Preston (1962) first studied the relationship between locus of control and achievement-related behaviors in children. Using the TAT measure of need for achievement, and the Intellectual Achievement Responsibility Questionnaire (the IAR, which they developed to assess children's beliefs in their own control of reinforcements in intellectual or academic achievement situations) and several other measures, they found that those children who had higher expectations of success also had higher achievement standards. For boys, the IAR measure was positively related to intellectual achievement efforts however, these results were not found
for girls. Phares (1976) reviewed other research using the IAR measure with children to relate locus of control to academic achievement and concluded that internality on the IAR or other measures of locus of control is related to academic achievement behaviors but that other variables, such as sex and grade level, confound the relationship. He also concluded that this relationship might not be as substantial in adult populations.

Bar-Tal and Bar-Zohar (1977), in a major review of literature on locus of control and academic achievement, found that, of the thirty-six studies reviewed, thirty-one reported a positive relationship between internal locus of control orientation and academic achievement. They concluded that it appears that in task-linked situations internals tend to exhibit a distinct motivational style. They tend to show more initiative, exert more effort, and persist to a greater extent than externals. Moreover, internals tend to differ in their cognitive reactions. They focus upon task-relevant information to a greater extent than externals, and they utilize it more efficiently ... the evidence suggests that perception of locus of control is related to academic performance in such a way that individuals with internal orientation tend to perform better on academic tasks than individuals with external orientation.

(Bar-Tal and Bar-Zohar, 1977, pp. 192-193.)

In older children populations, (junior and senior high students) the relationship between locus of control and academic achievement has shown inconsistent results.

Findings related to college-age populations also provide some support for the relationship between locus of control and academic achievement-related behaviors, although findings are sometimes inconsistent. Phares (1976) reviewed studies by several researchers and, in general, contradictory results regarding the relationship between locus of control and academic achievement can be concluded, although the relationship has been found to be more consistent for males than females. Duke and Nowiki (1974), using the Rotter I-E Scale (Rotter, 1966) and a scale which they developed to measure locus of control in adults (the Nowicki-Strickland Locus of Control Scale (ANSIE), found that internality was related to high grade point average (GPA) and SAT scores for males, but not for females when the ANSIE was used. The Rotter I-E scale did not correlate with the studied achievement-related behaviors. Gozali, Cleary, Walster, and Gozali (1973) studied university students and found that internals (especially females) used time in ways that were consistent with item difficulty. They stated that sense
of control may be one predictor of how well students perform on achievement tests.

Several researchers have attempted to use nonclassroom measures of achievement orientation to assess the relationship between locus of control and achievement. Stake (1979), using a college population, studied whether there was a relationship between the Rotter I-E Scale (Rotter, 1966), plans for graduate school and GPA. She found nonsignificant correlations between GPA and I-E scores for both males and females. However, she found that students who planned to attend graduate school were more internal than those who did not plan to attend or than those who had not made a decision for both males and females.

Rothberg (1980) studied corporate business executives and elite career military officers and found that locus of control orientation was not related to achieved power and thus concluded that being external was not a hindrance to the attainment of powerful and influential positions.

In a recent study by Crump, Hickson, and Laman (1985) the researchers attempted to determine whether education majors who were internally oriented had higher achievement levels (measured by ACT scores and cumulative
grade point averages) than education majors who were externally oriented. Although ACT scores, high school and college grade point averages were higher for internal subjects, the differences were not significant.

Findley and Cooper (1983) performed a meta-analysis to quantify the literature on locus of control and academic achievement. They concluded that "a) locus of control and academic achievement are significantly positively related, and b) the magnitude of the relation is small to medium, but the relation may hold substantial practical or explanatory significance relative to other explanations of the two variables." (Findley and Cooper, 1983, p. 427). They also concluded that other factors such as age, gender, etc. act as mediators to the relationship between locus of control and academic achievement.

It can be seen that much research supports the assertion that internally-oriented individuals display achievement-related behavior such as academic performance in children, although the relationship is less clear in adults. The relationship between locus of control and the need for achievement (achievement motivation) is not as clear cut.
Relationship Between Locus of Control and Achievement Motivation

Phares (1976) cited the relationship between locus of control and the need for achievement as modest and one that is best described as a nonlinear relationship. In a paraphrase of Rotter (1966) he states:

although people high in nAch usually show an internal control orientation, the reverse does not follow. A belief in an internal locus of control does not require that one be achievement-oriented. Indeed, many people may be internals but care very little how much they achieve. Likewise, a person may be high in nAch but not high in internality. (Phares, 1976, p. 110).

There are many reasons why the relationship between locus of control and need for achievement may be limited. Phares (1976) cited scale problems inherent in many achievement motivation measures as a probable reason for inconclusive findings of the relationship between locus of control and need for achievement.

Rotter (1966) offers other reasons for the difficulty in establishing a relationship between locus of control and achievement motivation. Rotter found that college students and adults (especially males) might possess strong achievement needs but also have an "external view as a defense against failure" (Rotter, 1966, p. 21). These individual's low expectancy for success leads them to verbally profess external beliefs
in order to defend themselves against failure. These individuals exhibit high nAch behavior in situations that are structured and competitive. Rotter has described these individuals as "defensive externals". A second limitation offered by Rotter is that "internal-external control attitudes are obviously not generalized across the board, and in the highly structured academic achievement situation there is probably more specificity determining response than in other kinds of situations." (Rotter, 1966, p. 21).

Mehrabian (1968) found a strong relationship between the locus of control and achievement motivation measures but stated later (Mehrabian and Bank, 1975) that the relationship is probably less strong because "in originally reporting his results, Mehrabian (1968) showed the -.64 achieving tendency/locus of control correlation as positive because he scored the Rotter (1966) scale with internality in the increasing direction" (Mehrabian and Bank, 1975).

Enders (1977) found a low correlation (-.21) between locus of control and need achievement for highly competitive dancers, gymnasts, choir and orchestra members. When the two variables were correlated by sex,
the correlation was significant for females and not males.

Feather (1967) first suggested that control of reinforcement variables might act as moderators in the relationship between achievement motivation and achievement-dependent variables. Wolk and DuCette (1973) attempted to explain this relationship between locus of control and achievement motivation. They suggested that the locus of control variable can increase the predictability of need for achievement theory when looking at several dependent variables. In two studies of college students, Wolk and DuCette failed to find significant correlations between locus of control and achievement motivation. However, they did find that locus of control acted as a moderating variable in the relationship between achievement motivation and the investigated dependent variables. Achievement motivation theory predicts that those high in the need for achievement prefer intermediate risks and perform at higher levels in test situations than those low in the need to achieve. This was found to be true only for internal subjects. Thus Wolk and DuCette suggest that "it is necessary for both situations and subjects to be internal before achievement motivation can make valid
predictions (Wolk and DuCette, 1973, p. 69). Studies by Batlis and Waters (1973), Durand and Shea (1974) and Wuensch and Lao (1976) support the theory that locus of control acts as a moderator variable in the relationship between achievement motivation and selected dependent variables, although in Batlis and Waters' research, locus of control shows only a slight nonsignificant moderating relationship between expectancy and performance. Ray (1984) replicated Wolk and DuCette's work using a "belief in luck" scale that was designed to measure Rotter's (1966) concept of locus of control and personality inventories that measured achievement orientation, task orientation, success orientation, fear of failure, and fear of success. Ray failed to confirm Wolk and DuCette's finding regarding "internals". Ray offers some reasons to explain the discrepancy between his study and Wolk and DuCette's two studies. He pointed out that Wolk and DuCette conducted an experiment in which preferred probability of success could not actually be determined; subjects were merely asked which probability they would prefer. Ray cited this as a possible "attitude-behavior" discrepancy. Ray also stated that Wolk and DuCette artificially related the dependent and independent variables through the use of a
"degree of intermediateness" score on level of aspiration rather than a direct comparison of motivation scores of subjects with various levels of aspirations.

Overall, the literature shows that, while it can be generally concluded that there is a positive relationship between locus of control and achievement-related behavior (which can be viewed as a measure of the need for achievement or achievement motivation), the relationship between locus of control and an individual's need to achieve appears to be not as clear-cut. Locus of control has been explained as a moderating variable in the relationship between achievement motivation and achievement-related behaviors by some researchers. Rotter (1966) himself has commented that the relationship is nonlinear in nature. Some researchers have suggested that the two variables of locus of control and achievement motivation, used together, are better predictors of achievement behavior.

Summary

A review of the literature has shown that adults participate or do not participate in educational activities for many reasons. Houle's (1961) early study of adult motivations for participation in adult learning activities resulted in three basic motivations for adult
participation. Houle's typology has been expanded and re-examined by many researchers and his classifications, as well as those of other researchers, have been tested with various subsamples of the adult population such as the elderly, health professionals, etc. Reasons for nonparticipation, or barriers to participation, have also been examined and broad classifications that cluster around situational, informational, institutional and dispositional factors have been offered as potential reasons for nonparticipation in adult educational activities.

Little research exists in adult education, and particularly medical record administration education, that concentrates on examining personality characteristics as additional reasons for participation/non-participation in adult educational activities. The concept of personality has been shown to be useful in predicting average behavior over certain periods of time. Two personality characteristics, achievement motivation and locus of control, were presented as theoretical bases for this study.

Achievement motivation theory, first defined by McClelland (1951, 1955) and later developed by Atkinson (1957; 1964; 1966) was described in relation to
participation and persistence. It was noted that Atkinson's achievement motivation theory examines an individual's motive to achieve success as well as an individual's motivation to avoid failure. Atkinson's theory predicts that the motive to achieve will be the strongest when the task is of intermediate difficulty. Other researchers, including Raynor (1974) and Horner (1968, 1974) have offered modifications of achievement motivation theory.

Persistence at activities has been shown to be a general characteristic of those individuals with a high need for achievement. Achievement motivation has been shown to be somewhat less predictive of participation in activities.

Locus of control, a personality construct which is belief based, was discussed in the larger framework of Rotter's social learning theory. Social learning theory and, specifically, locus of control theory (Rotter, 1966) looks at how individuals make choices about behaving when presented with many available behaviors. The locus of control construct takes into account reinforcement values, expectancies and the psychological situation. Individuals possessing an internal control orientation were shown to believe that they are able to influence the
occurrence of reinforcements around them by their behavior. Individuals possessing an external control orientation have been shown to believe that there is not a strong link between their own activities/behaviors and what eventually happens to them.

Research on locus of control as a predictor of participation and persistence was reviewed. Contradictory results were found for research on locus of control and participation. It has been difficult to determine the relationship between locus of control and participation, in all areas investigated as well as in educational activities, because other variables appear to have moderated the relationship between the two variables and because of incomparabilities of the locus of control scales used in the various studies. A clearer relationship between locus of control and persistence was found in the literature; in both children and adult samples locus of control was a better predictor of persistence than of participation.

Locus of control has been shown to be amenable to change through naturally-occurring events, such as age, maturation, the passage of time and environmental experiences and through artificially contrived methods such as behavior modification, counseling, training and
other therapeutic efforts. There have been contradictory findings as to whether locus of control becomes more internal or more external as individual's age, and research has supported both viewpoints.

The relationship between achievement motivation and locus of control was reviewed and, although research shows that there is a relationship between locus of control and achievement behaviors (i.e., obtaining a high GPA, enrolling in graduate school, etc.) the relationship between need for achievement and locus of control is not as clear-cut. Locus of control has been explained as a moderator variable in the relationship between achievement motivation and achievement-related behaviors by some researchers. It has been suggested that locus of control and achievement motivation used together are better predictors of achievement behavior. The relationship, then, between these two variables is a complex one and has yet to be definitively explained.
CHAPTER III
METHODOLOGY

The methodology used in this study is presented in this chapter. A framework that describes The Ohio State University Nontraditional Medical Record Administration Program is presented. A description of the populations and subjects under study is then described. Data collection procedures used for the study are discussed. The questionnaire used in the study is described by sections, including the two instruments used. Evidence of validity and reliability of these instruments is presented. The chapter concludes with a description of procedures performed to analyze qualitative data collected from open-ended questions on the questionnaire.

FRAMEWORK OF THE STUDY

This study examined Accredited Record Technicians (ART's) participating in The Ohio State University Summer 1988 Nontraditional Medical Record Administration Program as well as ART's from Ohio in the medical record profession who did not participate (nonparticipants) in this program. (The nonparticipant sample was split into two groups: ART's whose highest formal educational level
of attainment was high school or two-year community/junior college, and ART's who had either completed a four-year baccalaureate degree program or masters degree, or who were currently enrolled in a four-year degree program.)

The Nontraditional Medical Record Administration Program at The Ohio State University is a four-year baccalaureate degree progression program that leads to a bachelor of science degree in Medical Record Administration. This program permits students who already possess the credential of "Accredited Record Technician" (ART) to obtain a degree and to progress to the next level of the profession, "Registered Record Administrator". After obtaining the degree, individuals are permitted to sit for the credentialing exam offered by the American Medical Record Association. Individuals who pass the credentialing exam are allowed to use the designation of "Registered Record Administrator".

The Ohio State University Nontraditional Medical Record Administration Program is a "nontraditional" program in that it offers professional, medical record administration courses in a condensed format. Students nationwide attend classes at The Ohio State University campus for three weeks for three consecutive summers.
All coursework other than medical record administration courses, including basic educational requirements such as natural science, humanities, social sciences and electives, can be completed at colleges and universities in locales that are near students' homes. The benefits of the format are that students can continue to work in professional capacities and fulfill family and other adult responsibilities. The program is also "nontraditional" in that it allows students to obtain credit for life experiences through such mechanisms as challenge examinations and documentation of life experiences. The major emphasis of the program is on developing and enhancing student knowledge and competencies rather than adhering to "traditional" university policies and procedures.

It is with this framework of the nontraditional program in mind that the population and subjects can be understood.

POPULATION AND SUBJECTS

The subjects for this study were chosen from two populations: 1) ART's who participated in the Summer 1988 Nontraditional Medical Record Administration Program at The Ohio State University (N = 50), and, 2) active Ohio
ART's who did not participate in this educational program (N = 749). Samples drawn from the above two populations consisted of, respectively: 1) Ohio ART's who participated in The Nontraditional Medical Record Administration Program at The Ohio State University (n = 36) and, 2) a simple random sample of active Ohio ART's who did not participate in the educational program (n = 300). The frame for the participating ART sample consisted of a roster of all nontraditional medical record administration students. The frame for the nonparticipating ART sample consisted of a February, 1988 membership roster from the Ohio Medical Record Association. Sampling was limited to active ART's (N = 749) as listed on this membership roster. ("Active" ART's are those that consider themselves to be actively involved in the medical record profession.) Ohio ART's participating in The Ohio State University Nontraditional Medical Record Administration Program, active ART's who resided in other states (Kentucky, Michigan, Indiana and West Virginia) and ART's who were involved in part of the counseling, application, and admission process of the Nontraditional Medical Record Administration Program were removed from the frame. From this resulting active Ohio
ART population (N = 749), the simple random sample of 300 (40.1%) was drawn using a table of random numbers.

DATA COLLECTION PROCEDURES

Data from both the participant and nonparticipant samples were collected by survey methods. An envelope containing a cover letter with an assurance of confidentiality, the questionnaire (consisting of the Rotter I-E Scale (1966), the Measure of Individual Differences in Achieving Tendency (Mehrabian and Bank, 1978), three open-ended questions concerning barriers to participation and strategies used to cope with these barriers, and demographic questions) and a stamped, return envelope were mailed on May 31, 1988 to the nonparticipant sample and on June 1, 1988 to the participant sample. (See Appendix A for a sample questionnaire.)

A second, postcard reminder mailing was sent on June 7, 1988 to all subjects in the nonparticipant sample. Response for both the first and second postcard mailings was 153 or 51%. A third mailing, consisting of another cover letter, questionnaire, and stamped return envelope, was sent to the nonparticipant ART's who had not yet responded on June 21, 1988. Response for the three
mailings through July 18, 1988 was 221 or 73.7%. A fourth mailing was sent by certified mail on July 19, 1988 to the remaining nonrespondant nonparticipant ART's. Total response for the nonparticipant ART sample from the four mailings was 241 (80.3%). Eleven questionnaires were considered not complete and were omitted from the study, thus the data sample (subjects actually used) was 230 (76.7%). Followups for the participant ART sample were conducted during the three week nontraditional medical record administration program summer, 1988 session. Total response for the participant sample was 35 (97.2%).

To minimize nonresponse error in the nonparticipant sample, late respondents were compared to early respondents. As suggested by Babbie (1973), it was assumed that nonrespondents are similar to late respondents. Late respondents were compared to early respondents on the following measures: demographic variables; locus of control orientation; and achievement motivation. A t-test was used to determine whether means of early and late respondents were statistically significantly different for each of these measures. There were no statistically significant
differences between early and late respondents on any of the above variables except for the demographic variable of "type of institution". An analysis of data for "type of institution" revealed that early respondents displayed a wider range of types of institutions at which they held their primary jobs than did late respondents. However, overall, in both groups, a majority of respondents worked in acute care facilities.

Assuming that nonrespondents resemble late respondents, results of the estimate of nonresponse bias indicate that nonrespondents will not statistically significantly differ from respondents, except that nonrespondents' primary institutions in which they are employed might be expected not to vary as much as early respondents. Therefore, results of the study pertaining to nonparticipant ART's can be generalized to the target population of all active nonparticipant ART's in Ohio from which the sample was drawn.

DESCRIPTION OF THE QUESTIONNAIRE AND INSTRUMENTS

The questionnaire that was mailed to both the participant sample and the nonparticipant sample included four sections: 1) the Rotter Internal-External Scale (1966); 2) the Measure of Individual Differences in
Achieving Tendency (Mehrabian and Bank, 1978); 3) three open-ended questions concerning barriers to participation and coping strategies; and 4) questions concerning demographic characteristics of subjects. Each section of the questionnaire is described and validity and reliability for the two instruments are included.

Section I: Rotter Internal-External (I-E) Control Scale

Section I of the questionnaire includes the Rotter Internal-External Control Scale (Rotter, 1966). The I-E Scale was developed by Rotter (1966) to measure a sample of internal-external beliefs across a variety of situations. These situations include: academic recognition, social recognition, love and affection, dominance, social-political events, and general life philosophy. It is, therefore, a measure of generalized expectancy of an individual's "beliefs about the nature of the world" (Rotter, 1966, p. 10).

Rotter and other researchers saw the need to develop an I-E Scale that would measure functional relationships among differing goals (reinforcements). It had been theorized that a person could conceivably display internal behavior in one goal area of his life, such as social-political and could display external behavior in
another area, such as love and affection. By measuring internality and externality in many different areas of an individual's life, the general predictive ability of the instrument could be improved.

The Rotter I-E Control Scale was chosen for use in this study because: 1) the scale has acceptable validity and reliability, and 2) the scale is short and, when combined with other questions, does not overwhelm subjects.

The Rotter I-E Control Scale consists of a 29 item, forced choice test; twenty-three items measure internal-external beliefs and six items are used as "fillers" to disguise the purpose of the instrument. The scale is additive and scored in the direction of externality; the higher the score, the more externally-oriented is the individual.

Validity of the Rotter I-E Scale

The Rotter I-E Scale appears to positively address construct validity concerns by showing correlations with other measures that are similar in nature (Rotter, 1966). A later study by Zerega, Tzeng and Greever (1976) established concurrent validity between Rotter's scale and the MacDonald-Tseng Locus of Control Scale.
Rotter (1966) also reported negligible or low correlations between the I-E Scale scores and intelligence measures, as well as low to moderate correlations to social desirability measures and low or no correlations to adjustment measures. I-E Scale scores do not appear to relate to social desirability, intelligence, and adjustment measures.

**Reliability of the Rotter I-E Scale**

Rotter (1966) originally reported internal consistency correlations as relatively stable in several studies with university student populations. He also reported test-retest reliability for a one month period as consistent (between .60, and .83) although lower test-retest reliability correlations were found for a two month period. Cherlin and Bourque (1974) report overall reliabilities that are comparable (and even better) than Rotter's. They report "adequate" reliability in two different samples for each dimension of the scale.

Layton (1985), Little (1979) and Zerega, Tzeng and Greever (1976), reported moderate to strong test-retest reliability coefficients.

In summary, validity and reliability of the Rotter Internal-External Control Scale can be considered
acceptable. The Rotter I-E Scale shows fairly acceptable construct validity with other measures that are similar to the construct. Concurrent validity with the Tseng Locus of Control Scale was moderate to low. Discriminant validity was found to be acceptable when compared to the Marlowe-Crowne Social Desirability Scale. The I-E Scale shows low or negligible correlations with intelligence and low or negligible correlations with adjustment measures. Reliability of the I-E Scale as originally reported by Rotter (1966) shows the measure to be generally stable (.49 to .83) and subsequent studies have corroborated these findings.

Section II: Measure of Individual Differences in Achieving Tendency

Section II of the questionnaire includes the Measure of Individual Differences in Achieving Tendency (Mehrabian and Bank, 1978) which is the instrument used to measure the construct of achievement motivation. The Measure of Achieving Tendency is based on Atkinson's (1964) model of achievement motivation. Mehrabian originally saw the need to develop a reliable achievement measure that was easy to administer and score. Mehrabian's measures of achieving tendency (1968, 1969,
1978) have been used somewhat extensively rather than Atkinson's original method of measuring achieving tendency.

The Measure of Individual Differences in Achieving Tendency (Mehrabian and Bank, 1978) was chosen as the instrument to measure achievement motivation in this study because: 1) it consisted of a reasonably short, easy to administer scale, which, when used in conjunction with other scales/questions would not overwhelm subjects; 2) reported reliability and validity data showed that the instrument appears to be reliable and valid; 3) the instrument was generally suitable to both a college and non-college sample.

The Measure of Individual Differences in Achieving Tendency is a 38 item test in which individuals choose level of agreement on a nine point Likert-type scale (+4 to -4). Nineteen items are positively worded and nineteen items are negatively worded. A positive response to half of the items indicates that the motivation to achieve success is stronger than the motivation to avoid failure. A positive response on the other half of the items indicates that the motive to avoid failure is greater than the motive to achieve
success. An individual's total achievement motivation score is computed by algebraically summing the responses to the positively worded items and subtracting from this number the algebraic sum of the responses to the negatively worded items. The higher the score, the greater is an individual's Ms than Maf.

Validity of the Measure of Individual Differences in Achieving Tendency

For the 38 item scale, Mehrabian and Bank (1978) reported satisfactory convergent validity (.68-.74) with other similar achievement scales. Mehrabian and Bank (1978) also reported a correlation of .02 with the Crowne and Marlowe Social Desirability Scale. Mehrabian's measures of achieving tendency were found to be unrelated to various measures of affiliation. Mehrabian (1975) found significant negative correlations between his achieving tendency scales and Affiliative Tendency and Sensitivity to Rejection Scales (-.19 and -.35). Mehrabian and Bank (1978) reported that other studies have replicated this result.

As can be seen, the measure of Individual Differences in Achieving Tendency scale correlates significantly with other achievement scales. It is
fairly free of social desirability bias and independent of affiliation tendency.

Reliability of the Measure of Individual Differences in Achieving Tendency

Mehrabian and Bank (1978) reported a Kuder-Richardson (1937) formula (20) reliability coefficient of .91 using the 38 item scale. This is a high level of internal consistency. Reliability studies on earlier, similar instruments also show fairly high levels of reliability (Mehrabian, 1968, 1969).

SECTION III: BARRIERS TO PARTICIPATION AND COPING STRATEGIES

Section III of the questionnaire includes four questions concerning barriers to participation in a nontraditional ART progression program and strategies suggested for coping with these barriers. The first question in this section asks respondents whether there are any barriers they believe exist (or existed, in the case of ART's participating in the nontraditional program) to prevent them from participating in a nontraditional ART progression program. (If respondents answered "yes" to this question, they were instructed to answer the next three questions: if they answered "no"
they were instructed to skip to the "Demographic" section (Section IV) of the questionnaire. The second and third questions in this section asked respondents to indicate: 1) barriers that they have personally experienced that have prevented them from participating in a nontraditional ART progression program, and; 2) barriers that they believe exist for an ART trying to enter a nontraditional ART progression program. The first question addresses actual barriers that both the participant ART sample and the nonparticipant ART sample have experienced in trying to participate in a nontraditional ART progression program. The second question addresses perceived barriers (barriers that both participant and nonparticipant ART's perceive to exist for either themselves or other ART's who are trying to enter a nontraditional ART progression program).

The last question in this section asked the nonparticipant ART's to suggest coping strategies or ways they believe they could overcome the barriers to participation they previously listed. Participating ART's were asked to suggest actual coping strategies they used to overcome the barriers they listed in the previous questions.
The questions in Section III were pre-tested with four non-Ohio ART's who were scheduled to participate in the Ohio State University Nontraditional Medical Record Administration Program in Summer, 1988. The pre-test was conducted to determine if: 1) questions were clearly stated, and terms (such as "nontraditional ART progression program", "personally experienced", "ways you could overcome", etc.) were interpreted in a similar manner by all ART's; and 2) data collected were consonant with/similar to previous data which have been suggested in the literature. Results of the pre-test on Section III questions indicated that: 1) questions were easily understood and not misinterpreted by the pre-test respondents; 2) data generated were similar to data that have been discussed in the literature. Minor changes in wording of the questions were made, based on results of the pre-test.

SECTION IV: DEMOGRAPHIC DATA

Section IV of the questionnaire included eight demographic questions for the Ohio nonparticipant ART sample and nine demographic questions for the Ohio participant ART sample. Both samples were asked to answer questions in the following areas: 1) birthdate,
marital status; 3) whether they had/didn't have children living with them; 4) highest level of formal education; 5) how their ART credential was obtained; 6) whether they were currently enrolled in a four-year college/university degree program; 7) whether they planned to enroll in a four-year college/university degree program during the next five years; and 8) the type of institution at which they currently worked at their primary job. In addition to these questions, the Ohio participant ART sample was also asked a ninth question regarding which phase of the nontraditional medical record administration program at The Ohio State University they would be enrolled in during Summer, 1988.

**DATA ANALYSIS**

Descriptive and inferential statistics were used to analyze data collected. Demographic data from Section IV of the questionnaire were collected to describe the one participant and two nonparticipant samples. These data consist of nominal variables and data reduction techniques (Babbie, 1973) that were used to present the survey data in manageable form. Frequency distributions (numbers and percentages) were used.
Inferential statistics were used to analyze data in response to research questions one through six since the purpose of these questions was to infer information about the larger populations from which the nonparticipant and participant ART samples were drawn (Babbie, 1973). The SPSSX (1986) program was used to calculate all statistics. Research questions one through six were tested at the .05 level of significance. Analysis of variance (ANOVA) was used for research questions one and two, to test whether differences among the three independent sample means were significant. Analysis of variance (ANOVA) was used to test whether the means among phase one students, phase two and three students, and nonparticipating ART's who possessed degrees were significantly different for research questions three and four. The Pearson correlation coefficient was used as the statistic for research question five to determine the nature of the relationship between the two characteristics of locus of control and achievement motivation for participant ART's, nonparticipant ART's, and nonparticipant ART's with college. The Pearson correlation coefficient was also used to determine the nature of the relationship between the two
characteristics of age and locus of control for research question six. For research question seven, frequencies and percentages were calculated to determine whether or not ART's perceived that barriers exist to prevent them from participating in a nontraditional ART progression program (Minium and Clarke, 1978).

Data analysis for research questions eight through ten which consisted of qualitative answers from respondents, was conducted by using qualitative content analysis methods (Bogdan and Biklen, 1982). Comments were coded by major and sub-major content area and data were assigned to categories. Frequencies and percentages were calculated for each major category and subcategories.

Summary

Survey research methods were used to collect data from two populations: Ohio ART's participating in The Ohio State University Nontraditional Medical Record Administration Program and Ohio ART's not participating in this educational program. Of the second population, a distinction was made between a) ART's whose highest formal level of education was high school or two-year community college, and b) ART's who had completed a four-
year baccalaureate degree program or who were currently enrolled in a program of this nature. Questionnaires were mailed to all Ohio ART's participating in the educational program; the return rate for this population was 35 or 97.2%. A simple random sample of 300 (40.1%) was drawn from active Ohio ART's who were not enrolled in The Ohio State University Nontraditional Medical Record Administration Program. The total number of usable questionnaires returned was 230, or 76.7%. Non-response error was controlled by determining that late respondents did not differ greatly on demographic characteristics and on the study characteristics of locus of control and achievement motivation from early respondents and, therefore, results can be generalized back to the Ohio active ART nonparticipant population.

The questionnaire used in the study consisted of four sections: Section I included the Rotter Internal-External Control Scale (Rotter, 1966); Section II included the Measure of Individual Differences in Achieving Tendency (Mehrabian and Bank, 1978); Section III consisted of three open-ended questions concerning barriers to participation and coping strategies; and
Section IV consisted of questions concerning demographic characteristics of subjects.

Reliability and validity data were reported for the Rotter and Mehrabian and Bank instruments, respectively. Fairly high construct validity and low to moderate concurrent validity and fairly high discriminant validity were reported for the Rotter scale. Content validity data were reported. Reliability data for the Rotter scale showed that it was fairly stable.

Reliability and validity data were also reported for the Mehrabian and Bank scale. Criterion related validity for earlier, similar scales was moderate; higher correlations were found for congruent validity of the scale. The scale did not correlate with other dissimilar measures, thus discriminant validity was acceptable. The scale was shown to be highly reliable through several types of studies including ones in which internal consistency, split-half reliability, and test-retest reliability were assessed.

Data analysis methods for each research question and for the demographic data were presented. Descriptive statistics were used to categorize and simplify demographic data and for research question seven.
Inferential statistics were used to analyze data for research questions one through six. The SPSS\textsubscript{x} program was used to calculate statistics. Qualitative data methods were used to analyze data for research questions eight through ten.
CHAPTER IV
DATA ANALYSIS AND DISCUSSION

An analysis and discussion of the data collected for this study are provided in this chapter. Demographic information is first presented for ART participants and nonparticipants of the nontraditional medical record administration program at The Ohio State University. An analysis and discussion of each subsidiary research question in the order of presentation provided in Chapter I is then presented. The final section of the chapter provides an analysis and discussion of the central research question.

Demographics of ART Participants and Nonparticipants

Data for this study were collected by survey method from two samples: 1) ART's from Ohio who participated in The Ohio State University Nontraditional Medical Record Administration Program, (participant ART's) and 2) ART's from Ohio who did not participate in The Ohio State University Nontraditional Medical Record Administration Program (nonparticipant ART's). The participant ART sample was a purposive sample. It included all participant ART's from Ohio who attended the Summer 1988
compact course session at The Ohio State University or who were at that time enrolled in the program. This sample consisted of 36 subjects. Of this number, 35 (97.2%) completed and returned the questionnaire. All returned questionnaires were usable.

The nonparticipant ART sample consisted of 300 subjects. These subjects were randomly chosen from active Ohio ART's (as listed on the February, 1988 membership roster from the Ohio Medical Record Association). This sample constituted 40.1% of the 749 active Ohio ART's. Two hundred and forty-one nonparticipant ART's responded to the survey, thus the response rate was 80.3%. Of the 241 questionnaires returned, eleven were considered not usable and therefore 230 subjects (76.7%) constituted the data sample. The response rates for both samples is considered to be "very good" for data analysis and reporting (Babbie, 1973, p. 165). Responses received from both samples are displayed in Table 1.
Table 1
RESPONSE RATE FROM PARTICIPANT ART AND NONPARTICIPANT ART SAMPLES

<table>
<thead>
<tr>
<th></th>
<th>Participant</th>
<th>Nonparticipant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>ART's %</td>
</tr>
<tr>
<td>Population</td>
<td>54</td>
<td>100.0</td>
</tr>
<tr>
<td>Sample</td>
<td>36</td>
<td>66.7</td>
</tr>
<tr>
<td>Accepting Sample</td>
<td>35</td>
<td>97.2</td>
</tr>
<tr>
<td>Data Sample</td>
<td>35</td>
<td>97.2</td>
</tr>
</tbody>
</table>

Demographic data for sex, age, marital status, children, level of formal education, ART education, enrollment in a four-year college/university degree program, plans to enroll in a four-year degree program and type of institution at which primary job is held are reported in Tables 2-10. Data are reported by major demographic categories.

Gender

A breakdown of respondents by gender is displayed in Table 2. All respondents except for one respondent in the nonparticipant sample were female. (Of the two males who were randomly chosen and included in the sample of nonparticipant ART's, only one responded.) This high percentage of females reflects the trend at the national
level for the medical record profession to be dominated primarily by females.

Table 2
FREQUENCIES AND PERCENTAGES OF PARTICIPANT ART'S, NONPARTICIPANT ART'S, AND NONPARTICIPANT ART'S WITH COLLEGE BY GENDER

<table>
<thead>
<tr>
<th>Gender</th>
<th>Participant ART's (n = 35)</th>
<th>Nonparticipant ART's (n = 196)</th>
<th>Nonparticipant ART's w/college (n = 34)</th>
<th>Total (n = 265)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>0 0.0</td>
<td>1 0.5</td>
<td>0 0.0</td>
<td>1 0.4</td>
</tr>
<tr>
<td>Female</td>
<td>35 100.0</td>
<td>19.5 99.5</td>
<td>34 100.0</td>
<td>264 99.6</td>
</tr>
</tbody>
</table>

**Age**

Data for ages of respondents are displayed in Table 3. The ages of all respondents ranged from 21 years to 65 years. The age of respondents in the participant sample ranged from 21 to 55 years. The average age of respondents in the participant ART sample was 34.03 years with a standard deviation of 8.55. The age of respondents in the nonparticipant group ranged from 21-65 years. The average age of the respondents in the nonparticipant group ranged from 21-65 years. The average age of the respondents in the nonparticipant
The age of respondents in the nonparticipant with college group ranged from 22 to 62 years. The average age of nonparticipant ART's with college was 38.32 years with a standard deviation of 9.19. As can be seen from the data displayed in Table 3, the age range of ART's in both the nonparticipant ART group and the nonparticipant ART with college group was wider than the age range of the participant ART group. The mean age of the participant ART group as compared to the nonparticipant ART group and the nonparticipant ART with college group was younger.

### Table 3

**FREQUENCIES AND PERCENTAGES OF AGES OF PARTICIPANT ART'S, NONPARTICIPANT ART'S, AND NONPARTICIPANT ART'S WITH COLLEGE**

<table>
<thead>
<tr>
<th>Year Range</th>
<th>Participant ART's</th>
<th>Nonparticipant ART's</th>
<th>Nonparticipant ART's w/college</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n=35)</td>
<td>(n=191)</td>
<td>(n=34)</td>
</tr>
<tr>
<td>Mean</td>
<td>34.03</td>
<td>39.69</td>
<td>38.32</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>8.55</td>
<td>11.51</td>
<td>9.19</td>
</tr>
<tr>
<td>Range</td>
<td>21-55</td>
<td>21-65</td>
<td>22-62</td>
</tr>
<tr>
<td>21-30</td>
<td>14 40.0</td>
<td>47 24.0</td>
<td>5 14.7</td>
</tr>
<tr>
<td>31-40</td>
<td>14 40.0</td>
<td>57 29.1</td>
<td>16 47.1</td>
</tr>
<tr>
<td>41-50</td>
<td>5 14.3</td>
<td>52 26.5</td>
<td>10 29.4</td>
</tr>
<tr>
<td>51-60</td>
<td>2 5.7</td>
<td>24 12.2</td>
<td>2 5.9</td>
</tr>
<tr>
<td>&gt;60</td>
<td>0 0.0</td>
<td>11 5.6</td>
<td>1 2.9</td>
</tr>
<tr>
<td>No response</td>
<td>0 0.0</td>
<td>5 2.6</td>
<td>0 0.0</td>
</tr>
</tbody>
</table>
Marital Status

Data for marital status of respondents are displayed in Table 4. A majority of each of the three groups (21 or 60.0% of the participating ART's; 129 or 65.8% of the nonparticipant ART's; and 18 or 52.9% of the nonparticipant ART's with college) reported being married. Thirteen (37.1%) of the participant ART's, 38 (19.4%) of the nonparticipant ART's and 9 (26.5%) of the nonparticipant ART's with college were single. None of the participant ART's were divorced, as compared to 21 (10.7%) and 5 (14.7%) of the nonparticipant ART's and nonparticipant ART's with college, respectively.

Table 4
FREQUENCIES AND PERCENTAGES OF PARTICIPANT ART'S, NONPARTICIPANT ART'S AND NONPARTICIPANT ART'S WITH COLLEGE BY MARITAL STATUS

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Participant ART's (n=35)</th>
<th>Nonparticipant ART's (n=196)</th>
<th>Nonparticipant ART's w/college (n=34)</th>
<th>Total (n=265)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Married</td>
<td>21</td>
<td>60.0</td>
<td>129</td>
<td>65.8</td>
</tr>
<tr>
<td>Single</td>
<td>13</td>
<td>37.1</td>
<td>38</td>
<td>19.4</td>
</tr>
<tr>
<td>Divorced</td>
<td>0</td>
<td>0.0</td>
<td>21</td>
<td>10.7</td>
</tr>
<tr>
<td>Widowed</td>
<td>1</td>
<td>2.9</td>
<td>4</td>
<td>2.0</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td>No Response</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
<td>1.0</td>
</tr>
</tbody>
</table>
Children at Home

Data representing whether respondents had children living at home are displayed in Table 5. Participant ART's as a group had approximately 10% fewer individuals with children living at home. Twelve (34.3%) of the participant ART's reported that they had children living at home as compared to 93 (47.4%) of the nonparticipant ART's and 16 (47.1%) of the nonparticipant ART's with college.

Table 5
FREQUENCIES AND PERCENTAGES OF PARTICIPANT ART'S, NONPARTICIPANT ART'S AND NONPARTICIPANT ART'S WITH COLLEGE WITH CHILDREN LIVING AT HOME

<table>
<thead>
<tr>
<th>Children at Home</th>
<th>Participant ART's (n=35)</th>
<th>Non-Participant ART's (n=196)</th>
<th>Nonparticipant ART's w/college (n=34)</th>
<th>Total (n=265)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>12</td>
<td>93</td>
<td>16</td>
<td>124</td>
</tr>
<tr>
<td></td>
<td>34.3%</td>
<td>47.4%</td>
<td>47.1%</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>23</td>
<td>103</td>
<td>18</td>
<td>144</td>
</tr>
<tr>
<td></td>
<td>65.7%</td>
<td>52.6%</td>
<td>52.9%</td>
<td></td>
</tr>
</tbody>
</table>

Highest Level of Formal Education

From Table 6 it can be seen that a large majority of participant ART's (29 or 82.9%) and nonparticipant ART's (130 or 66.3%) reported the two year associate degree as
their highest level of formal education. Four (11.4%) of the respondents in the participant ART sample held four year baccalaureate degrees and one (2.9%) held a master's degree. In the nonparticipant ART sample, 64 (32.7%) reported high school as their highest level of formal education and two (1.0%) reported other mechanisms as their highest level of formal education. Of the nonparticipant ART's with college seven (20.6%) possessed a high school degree (and were currently enrolled in a college program); 10 (29.4%) possessed a two year associate degree and were currently enrolled in a four year baccalaureate program and 16 (47.1%) already had earned a four year baccalaureate degree. Three (1.1%) of all respondents reported their highest level of formal education as "other". This category included respondents who possessed three-year diplomas or diplomas from hospital-based schools.
### Table 6

<table>
<thead>
<tr>
<th>Highest Level of Formal Education</th>
<th>Participant ART's (n=35)</th>
<th>Nonparticipant ART's (n=196)</th>
<th>Nonparticipant ART's w/college (n=34)</th>
<th>Total (n=265)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>High School</td>
<td>1</td>
<td>2.9</td>
<td>64</td>
<td>32.7</td>
</tr>
<tr>
<td>Associate Degree</td>
<td>29</td>
<td>82.9</td>
<td>130</td>
<td>66.3</td>
</tr>
<tr>
<td>BA/BS Degree</td>
<td>4</td>
<td>11.4</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>MA/MS Degree</td>
<td>1</td>
<td>2.9</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**Technical Medical Record Education Method**

There are several mechanisms through which individuals can obtain technical level medical record education in order to sit for the ART credentialing examination. The American Medical Record Association (AMRA) previously offered a Correspondence Program in which the earning of college credit was not required. After January 1979, the Correspondence Program was replaced by the Independent Study Program (ISP). The ISP requires 30 semester hours of college courses. The lower percentages of subjects reflected in the data in Table 7 for this category can be explained by the fairly recent
start date of this Program. A third mechanism by which individuals can receive their technical medical record education is by earning a two year associate of arts or science degree at a community, junior or technical college. A fourth way in which individuals were able to earn a technical level medical record education was through one-year certificate programs at hospitals that offered these programs. Since the late 1970's these hospital-based programs have not been offered. On the questionnaire, the "other" category reflected individuals who received their technical level medical record education at hospital-based programs.

While a majority of all three groups (participant ART's, nonparticipant ART's, and nonparticipant ART's with college) received their technical medical record education by attending a two-year associate degree program, (74.3%, 54.1% and 58.8%, respectively) approximately 20% more of the participant ART sample than the nonparticipant sample received their technical level medical record education at a two year school. Six (17.1%) of participant ART's, 75 (38.3%) of nonparticipant ART's and 11 (32.4%) of nonparticipant ART's with college received their education through the
AMRA Correspondence Program. Again, the percentage of nonparticipant ART's and nonparticipant ART's with college who received their medical record technical education through the AMRA Correspondence Course is comparable. Two (5.7%) of the participant ART's, 12 (6.1%) of the nonparticipant ART's and three (8.8%) of the nonparticipant ART's with college received their education through the AMRA Independent Study Program. One (2.9%) of the participant ART's received her education by obtaining a two year associate degree and by taking the AMRA Correspondence Course. Three (1.5%) of the nonparticipant ART's received their education through other mechanisms (i.e., hospital-based certificate programs).

Table 7
FREQUENCIES AND PERCENTAGES OF PARTICIPANT ART'S, NONPARTICIPANT ART'S, AND NONPARTICIPANT ART'S WITH COLLEGE BY PRIMARY METHOD OF OBTAINING TECHNICAL EDUCATION

<table>
<thead>
<tr>
<th>Primary Method By Which Technical Education Obtained</th>
<th>Participant ART's (n=35)</th>
<th>Nonparticipant ART's (n=196)</th>
<th>Nonparticipant ART's w/college (n=34)</th>
<th>Total (n=265)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMRA Correspondence Course</td>
<td>6 17.1</td>
<td>75 38.3</td>
<td>11 32.4</td>
<td>92 34.7</td>
</tr>
<tr>
<td>AMRA Independent Study Program</td>
<td>2  5.7</td>
<td>12  6.1</td>
<td>3  8.8</td>
<td>17  6.4</td>
</tr>
<tr>
<td>Two Year Associate Degree</td>
<td>26 74.3</td>
<td>106 54.1</td>
<td>20 58.8</td>
<td>152 57.4</td>
</tr>
<tr>
<td>Other</td>
<td>1  2.9</td>
<td>3   1.5</td>
<td>0   0.0</td>
<td>4   1.5</td>
</tr>
</tbody>
</table>
Enrollment in a Four-Year College/University Degree Program

From Table 8 it can be seen that all of the participant ART's were enrolled in the nontraditional four year baccalaureate degree program at The Ohio State University. None of the nonparticipant ART group were enrolled in a four year baccalaureate degree program. Twenty (58.8%) of the nonparticipant ART's with college group were currently enrolled in a baccalaureate degree program and 14 (41.2%) of this group were not (these 14 subjects already possessed a four year baccalaureate degree).

Table 8

<table>
<thead>
<tr>
<th>Enrolled in College/University Program</th>
<th>Participant ART's (n=35)</th>
<th>Nonparticipant ART's (n=196)</th>
<th>Nonparticipant ART's w/college (n=34)</th>
<th>Total (n=265)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>35 100.0</td>
<td>0 0.0</td>
<td>20 58.8</td>
<td>55 20.8</td>
</tr>
<tr>
<td>No</td>
<td>0 0.0</td>
<td>196 100.0</td>
<td>14 41.2</td>
<td>210 79.2</td>
</tr>
</tbody>
</table>
Plans to Enroll in a Four-Year College/University Degree Program

While the participant ART group and the nonparticipant ART's with college group were currently enrolled in or already possessed a four year baccalaureate degree, it is evident from Table 9 that a large number (92 or 46.9%) of the nonparticipant ART's were undecided about attending college during the next five years. Seventy-seven (39.3%) were not planning on attending college during this time period and only 26 (13.3%) reported that they were planning on attending college during this time period.

Table 9
FREQUENCIES AND PERCENTAGES OF PARTICIPANT ART'S, NONPARTICIPANT ART'S, AND NONPARTICIPANT ART'S WITH COLLEGE PLANNING TO ATTEND COLLEGE

<table>
<thead>
<tr>
<th>Plan to Attend College</th>
<th>Participant ART's (n=35)</th>
<th>Nonparticipant ART's (n=196)</th>
<th>Nonparticipant ART's w/college (n=34)</th>
<th>Total (n=265)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>0</td>
<td>0.0</td>
<td>26</td>
<td>13.3</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0.0</td>
<td>77</td>
<td>39.3</td>
</tr>
<tr>
<td>Undecided</td>
<td>0</td>
<td>0.0</td>
<td>92</td>
<td>46.9</td>
</tr>
<tr>
<td>*No Response</td>
<td>35</td>
<td>100.0</td>
<td>1</td>
<td>.5</td>
</tr>
</tbody>
</table>

*Respondents were asked to skip this item if they answered that they were already enrolled in a college program.
Type of Institution at Which Primary Job is Held

It is apparent from data displayed in Table 10 that most of the respondents in all three groups worked in acute care hospitals for their primary jobs although approximately ten percent more nonparticipant ART's worked in this setting than participant ART's and nonparticipant ART's with college. Twenty-four (68.6%) of participant ART's, 153 (78.1%) of nonparticipant ART's and 24 (70.6%) of the nonparticipant ART's with college group worked in acute care hospitals. The nonparticipant ART group displayed a greater range of types of institutions than did the other two groups. Respondents in this group also held jobs in such institutions as specialty hospitals, clinics, government agencies, etc. Five (14.3%) of the participant ART's, 15 (7.7%) of the nonparticipant ART's and five (14.7%) of the nonparticipant ART's with college held their primary jobs at institutional facilities "other" than those listed on the survey instrument. The "other" category included those individuals who were: 1) not currently employed; 2) retired; 3) teaching at a two-year community college; 4) consultants; and 5) not employed in the medical record administration field. Only one respondent did not answer this question.
Table 10

FREQUENCIES AND PERCENTAGES OF PARTICIPANT ART'S, NONPARTICIPANT ART'S, AND NONPARTICIPANT ART'S WITH COLLEGE BY INSTITUTION AT WHICH PRIMARY JOB IS HELD

<table>
<thead>
<tr>
<th>Type of Institution</th>
<th>Participant ART's (n=35)</th>
<th>Nonparticipant ART's (n=196)</th>
<th>Nonparticipant ART's w/college (n=34)</th>
<th>Total (n=265)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Acute Care</td>
<td>24</td>
<td>68.6</td>
<td>153</td>
<td>78.1</td>
</tr>
<tr>
<td>Long Term</td>
<td>1</td>
<td>2.9</td>
<td>13</td>
<td>6.6</td>
</tr>
<tr>
<td>Specialty</td>
<td>3</td>
<td>8.6</td>
<td>5</td>
<td>2.6</td>
</tr>
<tr>
<td>Clinic</td>
<td>0</td>
<td>0.0</td>
<td>3</td>
<td>1.5</td>
</tr>
<tr>
<td>Health Assoc.</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Gov. Agency</td>
<td>1</td>
<td>2.9</td>
<td>3</td>
<td>1.5</td>
</tr>
<tr>
<td>Industry</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Dr. Office</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>14.3</td>
<td>15</td>
<td>7.7</td>
</tr>
<tr>
<td>No Response</td>
<td>1</td>
<td>2.9</td>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Summary of Demographic Data

Data were collected from two samples (ART's participating and ART's not participating in the Ohio State University Nontraditional Medical Record Administration Program). A third group (nonparticipant ART's with college) was split out from the ART nonparticipant sample, and data were reported separately for this group, since it was assumed that these
individuals might be more similar to the participant ART's than nonparticipant ART's.

All respondents, except for one nonparticipant ART, were female. The age range for the participant group was narrower than the age ranges for the nonparticipant and the nonparticipant with college groups. The mean age of the participant ART group was approximately five years younger than the mean ages of the other two groups.

A majority of respondents in all three groups was married. Participant ART's, as a group, had fewer individuals with children living at home than did the nonparticipant ART's and nonparticipant ART's with college. A majority of the participant ART's and nonparticipant ART's reported the two year associate degree as their highest level of formal education. The nonparticipant with college group included individuals who were enrolled in a four year baccalaureate degree program and individuals who had completed such a program. A majority of all three groups received their technical medical record education by attending a two year associate degree program. A large number of the nonparticipant ART's were undecided about attending college during the next five years. Most of the
respondent's in the three groups worked in acute care settings. The range of types of institutions was larger for the nonparticipant ART group than for the other two groups.

The description of each of the three groups studied provides a basis for the following section of this chapter, which presents an analysis of data. The analysis of data is presented in the order that the subsidiary research questions are presented in Chapter I. The central research question is addressed after a consideration of analysis and discussion of the subsidiary research questions.

Subsidiary Research Question One

Subsidiary research question one was posed to establish whether locus of control orientation differs among the three groups under study (participant ART's; nonparticipant ART's; and nonparticipant ART's with college). The answer to this question determines whether or not an individual's control orientation (i.e., being more "internal" or "external" in viewing the world) is useful in differentiating those ART's who participate and those ART's who do not participate in a nontraditional
medical record administration adult educational program.  
The question is stated as follows:  

Is there a difference in locus of control orientation among: a) participant ART's; b) nonparticipant ART's; and c) nonparticipant ART's with college?  

The answer to subsidiary research question one provides information, in an educational context, as to whether it can be expected that adults who participate in a nontraditional medical record administration education program, and similarly, nonparticipants who are enrolled in another type of four year degree program or who already possess a four year degree, will be more internal (i.e., have a higher expectation that their behaviors can affect their own outcomes) than nonparticipants in a nontraditional medical record administration education program.  

Means, standard deviations and ranges of locus of control scores derived from the Rotter (1966) Internal-External Control Scale are displayed in Table 11 for participant ART's, nonparticipant ART's and nonparticipant ART's with college. The means and standard deviations for these three groups are: 8.06 (SD = 4.19; range = 18.00), 9.20 (SD = 3.81; range = 17.00) and 8.50 (SD = 4.69; range = 16.00), respectively.
Table 11

LOCUS OF CONTROL ORIENTATION MEAN SCORES AS A DIFFERENTIATOR OF PARTICIPATION/NONPARTICIPATION IN A NONTRADITIONAL MEDICAL RECORD ADMINISTRATION PROGRAM

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant ART's</td>
<td>35</td>
<td>8.06</td>
<td>4.19</td>
<td>18.00</td>
</tr>
<tr>
<td>Nonparticipant ART's</td>
<td>196</td>
<td>9.20</td>
<td>3.81</td>
<td>17.00</td>
</tr>
<tr>
<td>Nonparticipant ART's with college</td>
<td>34</td>
<td>8.50</td>
<td>4.69</td>
<td>16.00</td>
</tr>
</tbody>
</table>

One-way analysis of variance (ANOVA) was used to compare the means of the three ART groups to determine if there were significant differences among them. Results of this analysis, reported in Table 12, show that there were not statistically significant differences among participant ART's, nonparticipant ART's, and nonparticipant ART's with college in locus of control orientation $F(2, 262) = 1.495, p = 0.226$. An examination of the means revealed that participant ART's, nonparticipant ART's, and nonparticipant ART's with college did not differ significantly in their locus of control orientations.
Table 12
THE RELATIONSHIP OF LOCUS OF CONTROL TO PARTICIPATION/NONPARTICIPATION IN A NONTRADITIONAL MEDICAL RECORD ADMINISTRATION PROGRAM

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups</td>
<td>2</td>
<td>47.400</td>
<td>23.700</td>
<td>1.495</td>
<td>0.226</td>
</tr>
<tr>
<td>Residual</td>
<td>262</td>
<td>4154.222</td>
<td>15.856</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>264</td>
<td>4201.623</td>
<td>15.915</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subsidiary Research Question One Summary

A review of the results for subsidiary research question one showed that mean locus of control scores for the participant ART's, nonparticipant ART's and nonparticipant ART's with college groups did not differ significantly.

Subsidiary Research Question Two

Subsidiary research question two was posed to establish whether achievement motivation differs among the three groups under study (participant ART's, nonparticipant ART's and nonparticipant ART's with college). The answer to this question determines whether an individual's achievement motivation is useful in differentiating those ART's who participate/do not
participate in a nontraditional adult educational program.

The question is stated as follows:

Is there a difference in need for achievement (achievement motivation) among: 1) participant ART's; b) nonparticipant ART's and c) nonparticipant ART's with college?

The answer to subsidiary research question two provides information, in an educational context, as to whether it can be expected that adults who participate in a nontraditional medical record administration education program, and similarly, nonparticipants who are enrolled in other types of four year university degree programs or who already possess a four year degree will display a higher need to achieve than nonparticipants of a nontraditional medical record administration educational program.

Means, standard deviations and ranges for individual differences in achieving tendency (achievement motivation) scores derived from the Measure of Individual Differences in Achieving Tendency (Mehrabian and Bank, 1978) are displayed in Table 13 for the three groups under study (participant ART's, nonparticipant ART's and nonparticipant ART's with college). The means, standard deviations and ranges for these three groups are: 83.54
(SD = 30.71, range = 113.00); 65.37 (SD = 32.96, range = 213.79); and 75.59 (SD = 32.12, range = 139.00), respectively.

Table 13

INDIVIDUAL DIFFERENCES IN ACHIEVING TENDENCY
MEAN SCORES AS A DIFFERENTIATOR OF
PARTICIPATION/NONPARTICIPATION IN A
NONTRADITIONAL MEDICAL RECORD ADMINISTRATION PROGRAM

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant ART's</td>
<td>35</td>
<td>83.54</td>
<td>30.71</td>
<td>113.00</td>
</tr>
<tr>
<td>Nonparticipant ART's</td>
<td>196</td>
<td>65.37</td>
<td>32.96</td>
<td>213.79</td>
</tr>
<tr>
<td>Nonparticipant ART's with college</td>
<td>34</td>
<td>75.59</td>
<td>32.12</td>
<td>139.00</td>
</tr>
</tbody>
</table>

One-way analysis of variance (ANOVA) was used to compare the means of the three groups to determine if there were statistically significant differences among them. The results of this analysis are provided in Table 14. There was a statistically significant difference in achieving tendency among the three ART groups F (2,262) = 5.4019, p = 0.0050. The Scheffe test was applied at the .05 confidence level to determine the difference among group means. (This procedure was used because it takes into account differing sample sizes and because it is a
conservative measure.) Analysis revealed that the mean of the participant ART group (83.54) was significantly higher than the mean of the nonparticipant ART group (65.37). Therefore, there was a significant difference between participant ART's and nonparticipant ART's regarding individual differences in achieving tendency (achievement motivation). No statistically significant differences in achievement motivation and participation were found between participant ART's and nonparticipant ART's with college and nonparticipant ART's and nonparticipant ART's with college.

Table 14
THE RELATIONSHIP OF ACHIEVING TENDENCY TO PARTICIPATION/NONPARTICIPATION IN A NONTRADITIONAL MEDICAL RECORD ADMINISTRATION PROGRAM

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups</td>
<td>2</td>
<td>11462.6132</td>
<td>5731.3066</td>
<td>5.4019</td>
<td>.0050</td>
</tr>
<tr>
<td>Residual</td>
<td>262</td>
<td>277977.4937</td>
<td>1060.9828</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>264</td>
<td>289440.1068</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subsidiary Research Question Two Summary

A review of the results for subsidiary research question two showed that there was a statistically
significant difference in individual differences in achieving tendency mean scores between the participant ART group and the nonparticipant ART group.

Subsidiary Research Question Three

Subsidiary research question three was posed to establish whether locus of control orientation differs among persisters and nonpersisters in an educational program. The answer to this question determines whether an individual's locus of control orientation is useful in differentiating those ART's who do and do not persist in an educational program.

The question is stated as follows:

Is there a difference in locus of control orientation among: a) first year nontraditional medical record administration students (students who have not yet shown persistence by attending the second and third summers of the nontraditional medical record administration program); b) second and third year nontraditional medical record administration students (students who have shown persistence); and c) nonparticipant ART's who possess a four year baccalaureate degree, master's degree, or doctoral (i.e., students who have shown persistence by obtaining a degree)?

The answer to subsidiary research question three provides information, in an educational context, as to whether it can be expected that adults who persist, or have persisted in an educational program will display a
more internal locus of control than adults who have not yet shown persistence.

Means, standard deviations, and ranges of locus of control scores derived from the Rotter (1966) Internal–External Control Scale are displayed in Table 15 for first year nontraditional medical record administration students, second and third year nontraditional medical record administration students, and nonparticipant ART's who possess a four year baccalaureate degree, master's degree or doctoral degree. The means, standard deviations and ranges for these three groups are 8.15 (SD = 3.93, range = 16.00), 8.00 (SD = 4.43, range = 18.00), and 7.88 (SD = 4.38, range = 14.00), respectively.

Table 15

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year Participant ART's</td>
<td>13</td>
<td>8.15</td>
<td>3.93</td>
<td>16.00</td>
</tr>
<tr>
<td>Second and Third Year Participant ART's</td>
<td>22</td>
<td>8.00</td>
<td>4.43</td>
<td>18.00</td>
</tr>
<tr>
<td>Nonparticipant ART's with a degree</td>
<td>16</td>
<td>7.88</td>
<td>4.38</td>
<td>14.00</td>
</tr>
</tbody>
</table>
One-way analysis of variance (ANOVA) was used to compare the means of these three groups to determine if there were significant differences in locus of control scores. The results of this analysis are given in Table 16. There were no statistically significant differences among first year nontraditional medical record administration students, second and third year nontraditional medical record administration students, and nonparticipant ART's with a baccalaureate degree in locus of control scores $F(2,48) = 0.015, p = 0.985$. An examination of the means revealed that these three groups did not statistically significantly differ in their locus of control orientations.

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups</td>
<td>2</td>
<td>0.558</td>
<td>0.279</td>
<td>0.015</td>
<td>0.985</td>
</tr>
<tr>
<td>Residual</td>
<td>48</td>
<td>885.442</td>
<td>18.447</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>886.000</td>
<td>17.720</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Subsidiary Research Question Three Summary

A review of the results of subsidiary research question three showed that mean locus of control scores for first year nontraditional medical record administration students (students who have not yet shown persistence), second and third year nontraditional medical record administration students (students who have shown persistence), and nonparticipant ART's who possess a baccalaureate degree (individuals who have shown persistence) did not differ significantly.

Subsidiary Research Question Four

Subsidiary research question four was posed to establish whether achievement motivation differs among persisters and nonpersisters in a nontraditional adult educational program. The answer to this question determines whether or not an individual's achievement motivation is useful in differentiating between those ART's who have shown persistence in an educational program and those who have not.

The question is stated as follows:

Is there a difference in need for achievement (achievement motivation) among: a) first year nontraditional medical record administration students (students who have not yet shown persistence by attending the second and third summers of the nontraditional medical record
administration program); b) second and third year nontraditional medical record administration students (students who have shown persistence); and c) nonparticipant ART's who possess a four year baccalaureate degree, masters degree, or doctoral degree (students who have shown persistence by obtaining a degree)?

The answer to subsidiary research question four provides information, in an educational context, as to whether it can be expected that adults who persist, or have persisted in an educational program, will display a higher need to achieve (achievement motivation) than adults who have not yet shown persistence.

Means, standard deviations, and ranges of individual differences in achieving tendency scores derived from the Measure of Individual Differences in Achieving Tendency (Mehrabian and Banks, 1978) are displayed in Table 17 for first year nontraditional medical record administration students, second year and third year nontraditional medical record administration students, and nonparticipant ART's who possess a four year baccalaureate degree, masters degree or doctoral degree. The means, standard deviation and ranges for these three groups are 80.98 (SD = 35.99, range = 113.00), 85.05 (SD = 27.93; range = 86.00); and 73.75 (SD = 42.47, range = 139.00), respectively.
Table 17
INDIVIDUAL DIFFERENCES IN ACHIEVING TENDENCY MEAN SCORES AS A DIFFERENTIATOR OF PERSISTENCE IN A NONTRADITIONAL MEDICAL RECORD ADMINISTRATION PROGRAM

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year Participant ART's</td>
<td>13</td>
<td>80.98</td>
<td>35.99</td>
<td>113.00</td>
</tr>
<tr>
<td>Second and Third Year</td>
<td>22</td>
<td>85.05</td>
<td>27.93</td>
<td>86.00</td>
</tr>
<tr>
<td>Participant ART's</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonparticipant ART's</td>
<td>16</td>
<td>73.75</td>
<td>42.47</td>
<td>139.00</td>
</tr>
<tr>
<td>with a Degree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

One-way analysis of variance (ANOVA) was used to compare the means of these three groups to determine if there were significant differences in individual differences in achieving tendency (achievement motivation) scores. The results of this analysis are displayed in Table 18. There were no statistically significant differences among first year nontraditional medical record administration students, second and third year nontraditional medical record administration students, and nonparticipant ART's with a baccalaureate degree in achievement motivation scores $F (2, 48) = 0.483, p = 0.620$. An examination of the means revealed that these three groups did not significantly differ.
in their individual differences in achieving tendency (achievement motivation levels).

Table 18
THE RELATIONSHIP OF INDIVIDUAL DIFFERENCES IN ACHIEVING TENDENCY TO PERSISTENCE IN A NONTRADITIONAL MEDICAL RECORD ADMINISTRATION PROGRAM

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups</td>
<td>2</td>
<td>1188.058</td>
<td>594.029</td>
<td>0.483</td>
<td>0.620</td>
</tr>
<tr>
<td>Residual</td>
<td>48</td>
<td>58979.216</td>
<td>1228.734</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>60167.274</td>
<td>1203.345</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Summary of Subsidiary Research Question Four

A review of the results of subsidiary research question four showed that mean achievement motivation scores for first year nontraditional medical record administration students (students who have not yet shown persistence), second and third year nontraditional medical record administration students (students who have shown persistence), and nonparticipant ART's who possess a baccalaureate degree (individuals who have shown persistence) did not significantly differ.
Subsidiary Research Question Five

Subsidiary research question five was posed to describe the relationship between need to achieve and locus of control for participant ART's, nonparticipant ART's and nonparticipant ART's with college. The answer to this question determines the degree of association between the need to achieve and locus of control variables. A greater degree of association between locus of control orientation and achievement motivation strengthens the argument that, when used together, both variables have greater power as differentiators of participation in a nontraditional medical record administration program.

The question is stated as follows:

What relationship exists between need to achieve and locus of control orientation for: 1) participant ART's; b) nonparticipant ART's; and c) nonparticipant ART's with college?

The Pearson product-moment correlation (Pearson r) was performed to assess the relationship that may exist between locus of control orientation and achievement motivation for participant ART's, nonparticipant ART's and nonparticipant ART's with college.

An analysis of data revealed that there was a statistically significant low to moderate negative
correlation between locus of control orientation and achieving tendency for all three groups under study. (Participant ART's: $r = -.4608, p = .003$; Nonparticipant ART's: $r = -.3575, p = .000$; Nonparticipant ART's with college: $r = -.3670, p = .016$.) As locus of control scores decreased (i.e., as individuals were found to have more internal orientations) achievement motivation scores increased (individuals were found to have a higher need to achieve).

Summary of Subsidiary Research Question Five

Research question five was asked to establish the nature of the relationship between locus of control orientation and achievement motivation. Analysis using a Pearson $r$ determined that a statistically significant negative relationship existed between locus of control orientation and achievement motivation for all three study groups (participant ART's, nonparticipant ART's and nonparticipant ART's with college). It was found that as locus of control scores decreased, achievement motivation scores increased; in other words as individuals became more internal in their orientations, they appeared to possess a higher need to achieve.
Subsidiary Research Question Six

Subsidiary research question six was posed to describe the relationship that exists between age of an ART and locus of control orientation for participant ART's, nonparticipant ART's and nonparticipant ART's with college. The answer to this question establishes whether, in the three ART groups, there is a trend toward increasing internality or externality in locus of control orientation as ART's grow older.

The question is stated as follows:

What relationship exists between age of ART's and locus of control for: a) participant ART's; b) nonparticipant ART's; and c) nonparticipant ART's with college?

A Pearson product-moment correlation coefficient (Pearson r) was calculated for age and the Rotter (1966) Internal-External Control Scale scores for each of the three study groups.

Analysis of the data revealed that for participant ART's, there was no statistically significant relationship between age and locus of control orientation (r = -.2272, p = .189). For nonparticipant ART's however, a statistically significant relationship existed between age and locus of control orientation (r = .1777, p = .014) although the degree of association was low.
For nonparticipant ART's with college, no statistically significant relationship existed between age and locus of control \( (r = -0.1868, p = .290) \). For all groups, as individuals' ages increased, their locus of control scale scores decreased (i.e., individuals became more internal in their orientations), although this relationship was statistically significant only for the nonparticipant ART group.

**Subsidiary Research Question Six Summary**

Research question six was posed to describe the nature of the relationship between age of ART's and their locus of control orientations. Analysis using a Pearson \( r \) determined that a statistically significant relationship existed only for the nonparticipant ART group, although for all groups, it was found that as ages increased, locus of control scores decreased (i.e., individuals became more internal).

**Subsidiary Research Question Seven**

For subsidiary research questions seven through ten, data were analyzed for the two main samples: participant ART's and nonparticipant ART's. (The nonparticipant ART group included nonparticipant ART's with college.) This was done because the questions were designed to determine
general differences in responses between those who participated (participant ART's) and those who did not (both nonparticipant ART's and nonparticipant ART's with college).

Subsidiary research question seven was posed to establish whether or not ART's perceived any existing barriers that would prevent them (or, in the case of participant ART's did initially prevent them) from participation in a nontraditional ART progression program. The answer to this question establishes whether there is a difference in perception between participant ART's and nonparticipant ART's as to whether barrier's exist (existed) that prevent (prevented) them from participating in a nontraditional medical record administration program.

The question is stated as follows:

Are there any barriers that ART's believe exist to prevent them from participating in a nontraditional ART progression program?

Frequencies and percentages of whether or not participant ART's and nonparticipant ART's believed that barriers exist or existed that prevent or prevented them from participating in a nontraditional ART progression program are displayed in Table 19. Examination of
percentages revealed that both groups were similar in their beliefs of whether barriers existed to prevent participation in a nontraditional ART progression program. Seventeen (48.6%) of the 35 participant ART's responded that barriers existed for them before they participated; 18 (51.4%) of this group responded that barriers did not exist which initially prevented them from participation. One hundred fifteen (50.0%) of the 230 nonparticipant ART's responded that barriers exist that prevent them from participation and 115 (50.0%) of this group responded that barriers do not exist that would prevent them from participating in a nontraditional ART progression program.

Responses to research questions 8-10 are representative of only those ART's from both the participant and the nonparticipant groups who responded that they believed barriers exist (existed) to prevent participation in a nontraditional ART progression program. If respondents answered "no" to this question, they were instructed not to complete the next three questions. Data for the next three research questions are representative of approximately half of both the participant and the nonparticipant ART groups.
Table 19
PERCEIVED BARRIERS TO PARTICIPATION IN A NONTRADITIONAL ART PROGRESSION PROGRAM

<table>
<thead>
<tr>
<th>Perceived Barriers to Participation</th>
<th>Participant ART's (n=35) f</th>
<th>%</th>
<th>Nonparticipant ART's (n=230) f</th>
<th>%</th>
<th>Total (n=265) f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>17</td>
<td>48.6</td>
<td>115</td>
<td>50.0</td>
<td>132</td>
<td>49.8</td>
</tr>
<tr>
<td>No</td>
<td>18</td>
<td>51.4</td>
<td>115</td>
<td>50.0</td>
<td>133</td>
<td>50.2</td>
</tr>
</tbody>
</table>

Subsidiary Research Question Seven Summary

Subsidiary research question seven was asked to establish whether or not ART's perceived existing barriers to participation and if there were differences in perception between nonparticipant ART's and participant ART's as to these barriers. Analysis of data revealed that the two groups had similar perceptions regarding whether barriers existed (exist) that prevent participation. Approximately half of the respondents in each group perceived barriers to participation and approximately half did not perceive barriers.

Subsidiary Research Question Eight

Subsidiary research question eight was posed to establish the kinds of barriers ART's have actually experienced that have prevented participation in a
nontraditional medical record administration program. The answer to this question provides information about the actual (as compared to perceived) barriers that both participant ART's and nonparticipant ART's have experienced in trying to participate in a nontraditional ART progression program and allows these barriers to be described and quantified. Data for this question, as well as subsidiary research questions nine and ten, were collected as responses to open-ended questions. In order to quantify these data, responses were assigned to four major categories of barriers identified from the literature. These categories were: 1) situational barriers; 2) institutional barriers; 3) dispositional barriers; and 4) informational barriers. After each response was categorized into one of these four groups, subcategories within each group were identified. Frequencies and percentages were calculated for the four major barrier categories (situational, institutional, dispositional and informational) and for subcategories within these categories (ex: "lack of money" was determined to be a subcategory of the situational category).
Subsidiary research question eight is stated as follows:

What are the barriers that ART's have actually experienced that have prevented them from participating in a nontraditional ART progression program and how do these barriers differ between: a) participant ART's; and, b) nonparticipant ART's?

Frequencies and percentages of actually experienced barriers by major barrier category are displayed in Table 20 for participant ART's and nonparticipant ART's. Overall, 323 barriers were cited as ones which both participant ART's and nonparticipant ART's have actually experienced that prevented participation in a nontraditional ART progression program. Situational barriers accounted for the largest percentage of actually-experienced barriers for both participant and nonparticipant ART's (62.1% of the responses for participant ART's and 74.0% for nonparticipant ART's). Institutional barriers were cited as the next major barrier category for both groups (24.1% for participant ART's and 16.7% for nonparticipant ART's). Dispositional barriers were the next most frequently cited barrier category by both groups (10.3% of the responses for participant ART's and 5.3% of the responses by the nonparticipant ART's). Informational barriers were cited
least frequently by both groups (3.4% of the responses for participant ART's and 4.2% of the responses for nonparticipant ART's).

Table 20

SUMMARY OF ACTUALLY-EXPERIENCED BARRIERS THAT PREVENTED ART PARTICIPATION IN A NONTRADITIONAL ART PROGRESSION PROGRAM

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Participant ART's</th>
<th>Nonparticipant ART's</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>Situational</td>
<td>36(1)*</td>
<td>62.1</td>
<td>196(1)*</td>
</tr>
<tr>
<td>Institutional</td>
<td>14(2)</td>
<td>24.1</td>
<td>44(2)</td>
</tr>
<tr>
<td>Dispositional</td>
<td>6(3)</td>
<td>10.3</td>
<td>14(3)</td>
</tr>
<tr>
<td>Informational</td>
<td>2(4)</td>
<td>3.4</td>
<td>11(4)</td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
<td>100.0</td>
<td>265</td>
</tr>
</tbody>
</table>

*Numbers in parentheses indicate rank order of the category.

Tables 21-24 display frequencies and percentages of subcategories for each major barrier category for participant ART's and nonparticipant ART's.

Actually-Experienced Situational Barriers

Situational barriers that participant and nonparticipant ART's experienced are displayed in Table 21. Participant ART's reported 36 situational barriers and nonparticipant ART's reported 196 situational barriers. There were nine subcategories that emerged
after the data were coded by subcategories. These situational subcategories listed in order of frequency by total ART's included:

1) **Cost** - This subcategory included all responses that pertained to lack of money, financial concerns, costs of participation, etc.

2) **Family** - This subcategory included all responses that pertained to conflicts between family obligations and participation in a nontraditional ART progression program. These included barriers such as: "family pressure not to take time and effort to further career"; "difficulty in leaving family"; "involvement in children's activities"; "married life commitments"; "inadequate support system for family/day care", etc.

3) **Work** - This subcategory included all responses that pertained to conflicts between work obligations and participation in a nontraditional ART progression program. These included barriers such as: "not having enough vacation time to attend concentrated educational sessions"; "nonsupportive supervisors", etc.

4) **Personal Problems** - This subcategory included problems peculiar to an individual, such as "undergoing a
divorce", "personal commitments outside work and family"; "running a business", etc.

5) **Time** - This general subcategory included all responses that pertained to lack of time to become involved/study, etc.

6) **Health** - This subcategory included all responses that pertained to the general physical and mental health of respondents. These included barriers such as: "too much stress", "too tired", "exhausted physically and mentally", "inability to travel" (to educational sessions) due to poor health", etc.

7) **Age** - This subcategory included all responses that pertained to the age of the respondent.

8) **Transportation** - This subcategory included all responses that pertained to the lack of transportation to enable the respondent to travel to local and centralized educational opportunities.

9) **Other** - this subcategory included two other barriers: "other educational commitments" (i.e., already pursuing another degree) and "religious obligations".
### Table 21

**ACTUALLY EXPERIENCED SITUATIONAL BARRIERS THAT PREVENTED PARTICIPATION IN A NONTRADITIONAL ART PROGRESSION PROGRAM**

<table>
<thead>
<tr>
<th>Situational Barrier</th>
<th>Participant ART's</th>
<th>Nonparticipant ART's</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>Work</td>
<td>12(1)*</td>
<td>33.3</td>
<td>58(1)*</td>
</tr>
<tr>
<td>Family</td>
<td>8(3)</td>
<td>22.2</td>
<td>54(2)</td>
</tr>
<tr>
<td>Cost</td>
<td>9(2)</td>
<td>25.0</td>
<td>38(3)</td>
</tr>
<tr>
<td>Time</td>
<td>4(4)</td>
<td>11.1</td>
<td>22(4)</td>
</tr>
<tr>
<td>Age</td>
<td>0</td>
<td>0.0</td>
<td>11(5)</td>
</tr>
<tr>
<td>Health</td>
<td>2(5)</td>
<td>5.6</td>
<td>6(6)</td>
</tr>
<tr>
<td>Personal Problems</td>
<td>1(6)</td>
<td>2.8</td>
<td>3(7)</td>
</tr>
<tr>
<td>Transportation</td>
<td>0</td>
<td>0.0</td>
<td>2(8)</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0.0</td>
<td>2(8)</td>
</tr>
</tbody>
</table>

*Numbers in parenthesis indicate rank order of each subcategory.

The primary situational barrier experienced by participant ART's was related to work. Twelve (33.3%) of the total situational responses cited pertained to conflicts between work obligations and participation in a nontraditional ART progression program. Comments pertaining to situational work barriers included: "I had difficulty in finding a full-time job because of the
three weeks required to be on campus during the summer and the eight week management affiliation"; "I have excessive demands on me at work"; "I don't receive enough vacation time to take off for the three week on campus summer session"; "If I use my vacation to attend school, then I don't have any vacation time from work", etc..

The primary situational barrier reported by nonparticipant ART's was also "Work" (58 or 29.6% of the situational responses were work-related). Comments pertaining to situational work barriers were similar to comments made by participant ART's and included: "I have many job demands"; "I need to work full-time"; "I can't get time off from work"; "I have heavy management responsibility at work"; etc..

The second most important situational barrier to participation that participant ART's experience was "Cost". Lack of money accounted for nine (25.0%) of the situational responses related to this subcategory.

By comparison, nonparticipant ART's responded that "family obligations" were the second most important barrier to participation. Fifty-four (27.6%) of the responses pertained to this subcategory. Such comments as "I am raising teenagers alone"; "I have difficulty in
leaving my family for that period of time"; etc. were characteristic of the importance of this barrier in preventing participation for the nonparticipant ART group.

The third most important situational barrier to participation that participant ART's experienced was "Family". Eight (22.2%) of the situational responses pertained to this subcategory. In contrast, nonparticipant ART's responded that "Cost" was the third most important situational barrier that they had experienced. Thirty-eight (19.4%) of the responses pertained to this situational subcategory.

"Time" was reported by both the participant ART group and the nonparticipant ART group as the fourth major situational barrier that prevented participation. Four or 11.1% of the responses of participant ART's and 22 or 11.2% of the responses of nonparticipant ART's pertained to this situational barrier subcategory.

"Health" was cited as the fifth most important situational barrier by participant ART's (2 or 5.6% of the responses pertained to this situational subcategory). Nonparticipant ART's responded that "Age" was the fifth
most important situational barrier (11 or 5.6% of the responses pertained to this situational subcategory).

Participant ART's responded that "Personal Problems was the sixth and last situational barrier that they experienced. One, or 2.7%, of the responses pertained to this situational subcategory. By comparison "Health" was cited as the sixth situational barrier subcategory by nonparticipant ART's. Six (3.1%) of the responses pertained to this subcategory.

Nonparticipant ART's reported a wider range of experienced situational barriers than did participant ART's. In addition to the above cited barriers this group also cited "Personal Problems" (3 or 1.5% of the situational responses), "Transportation" (2 or 1.0% of the situational responses) and "Other" (2 or 1.0% of the situational responses) as the last three situational barrier subcategories that prevented participation in a nontraditional ART progression program. The "Other" category included such comments as "living in a rural area" and "church-related activities" that were barriers to participation.
Actually-Experienced Institutional Barriers

Frequencies and percentages of institutional barriers that participant ART's and nonparticipant ART's experienced are displayed in Table 22. The following institutional barrier subcategories emerged after the data were coded:

1) Distance - This subcategory included all responses that pertained to the viewing of distance/location of the progression program as a barrier to participation.

2) Course and life experience equivalency - This subcategory included all responses that pertained to difficulty in equating life experiences to course credit or difficulty in obtaining transfer credit for courses taken at local schools;

3) Length of program - This subcategory included all responses that pertained to the length of the ART progression program, including the number of classes needed to complete the program once enrolled, the number of prerequisite courses required before entry into the program is permitted, and not having the appropriate previous coursework completed.

4) Inconvenient times/locations of local programs - This subcategory included all responses that pertained to
local school course offerings (i.e., courses given at inconvenient locations, the "right" courses not offered at the "right" times, courses geared toward full-time students rather than part-time, working adults, the lack of local schools that offer courses needed as prerequisites, etc.).

5) **Heavy academic load required** - This subcategory included all responses that pertained to the amount of work required while enrolled in an ART progression program, including lengthy and involved project work.

6) **Clinical Requirement** - This subcategory refers to all responses that pertained to the requirement, in ART progression programs, for a certain number of weeks (usually three to eight) to be spent on a clinical affiliation at a health care facility away from one's home.

7) **Inflexibility** - This subcategory included all responses that pertained to the inflexibility of the adult education institution in meeting individual student needs. This included such responses as having to comply with rigid school requirements (including non-medical record courses) in order to fulfill graduation requirements.
Table 22
ACTUALLY-EXPERIENCED INSTITUTIONAL BARRIERS THAT PREVENTED PARTICIPATION IN A NONTRADITIONAL ART PROGRESSION PROGRAM

<table>
<thead>
<tr>
<th>Institutional Barrier</th>
<th>Participant ART's</th>
<th>Nonparticipant ART's</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>Distance</td>
<td>2(3)*</td>
<td>14.3</td>
<td>31(1)*</td>
</tr>
<tr>
<td>Length of program</td>
<td>5(1)</td>
<td>35.7</td>
<td>6(2)</td>
</tr>
<tr>
<td>Inconvenient times/locations/format</td>
<td>2(3)</td>
<td>14.3</td>
<td>4(3)</td>
</tr>
<tr>
<td>Heavy academic load</td>
<td>3(2)</td>
<td>21.4</td>
<td>0</td>
</tr>
<tr>
<td>Course/life experience equivalency</td>
<td>1(5)</td>
<td>7.1</td>
<td>2(4)</td>
</tr>
<tr>
<td>Clinical requirement</td>
<td>1(5)</td>
<td>7.1</td>
<td>0</td>
</tr>
<tr>
<td>Program not flexible</td>
<td>0</td>
<td>0.0</td>
<td>1(5)</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>100.0</td>
<td>44</td>
</tr>
</tbody>
</table>

*Numbers in parentheses indicate rank order of each subcategory.

Both the participating ART and nonparticipating ART groups experienced fewer institutional than situational barriers to participation. The primary institutional barrier cited by the participant ART group was "length of the program". Five (35.7%) of the total responses pertained to this subcategory. "Heavy academic load" was cited by this group as the second major institutional barrier. Three (21.4%) of the responses pertained to this subcategory. "Inconvenient times/locations/formats"
and "Distance" were cited next most frequently by participant ART's. "Clinical requirement" was only cited once by participant ART's.

The primary institutional barrier cited by nonparticipant ART's was "Distance". Thirty-one (70.5%) of the responses pertained to this institutional barrier. "Length of Program" was cited as the second most important institutional barrier. Six (13.6%) of the responses pertained to this subcategory. "Inconvenient times/locations/formats" was cited as third most important institutional barrier and accounted for four or 9.1% of the institutional responses. "Course/Life experience equivalency" was cited next most frequently and accounted for 4.5% of the institutional responses. Only one nonparticipant ART responded that the "Program was not flexible".

**Dispositional Barriers**

Dispositional barriers that participant ART's and nonparticipant ART's experienced that prevented participation in a nontraditional ART progression program are displayed in Table 23. The following dispositional barriers emerged after the data were coded:
1) **RRA not important to me** - This subcategory included all responses that pertained to ART's not believing that the attainment of the RRA designation was desirable or indecision about the attainment of the RRA.

2) **Motivation** - This subcategory included all responses that pertained to motivations, personal commitment, ambition and desire to learn/obtain a degree.

4) **Self-discipline** - This subcategory included all responses that pertained to the ability or inability to use discipline in studying, attending courses, setting educational goals, etc.

5) **Dislike of math courses** - This subcategory included all responses that pertained to an individual's negative feelings about mathematics.

6) **Positive attitude** - This subcategory included all responses that pertained to an individual's positive attitude toward all situations encountered during the learning experience. It included such attitudes as flexibility, ability to deal with ambiguity, etc.

7) **Uncertainty about staying in the profession** - This subcategory included all responses that pertained to indecision about remaining in the medical record profession.
8) **Fear of the campus/faculty/unknown** - This subcategory included all responses that pertained to an individual's feelings of fear as related to the learning situation. Included were comments about fear of attending a large campus, fear of authority/faculty/intimidation, fear of the unknown (trying something new), fears related to being out of school for a long time, etc.

Few dispositional barriers were cited as having been experienced by both the participant ART and the nonparticipant ART groups. The most important dispositional barriers that was cited by participant ART's was "Motivation". Two (33.3%) of the responses pertained to this subcategory. "Fear of campus/faculty/unknown", "positive attitude", "uncertainty about staying in the profession" and "RRA may not be important to me" were cited once each.

Nonparticipant ART's cited "Lack of motivation" and "RRA not important to me" as the two main dispositional barriers that they experienced which prevented participation in a nontraditional ART progression program. Five (35.7%) of the responses pertained to each of these subcategories. "Self-discipline" was cited
"Dislike of math courses" and "Fear of campus/faculty/unknown" were each cited once.

### Table 23

**ACTUALLY-EXPERIENCED DISPOSITIONAL BARRIERS THAT PREVENTED PARTICIPATION IN A NONTRADITIONAL ART PROGRESSION PROGRAM**

<table>
<thead>
<tr>
<th>Dispositional Barrier</th>
<th>Participant ART's</th>
<th>Nonparticipant ART's</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>RRA not important to me</td>
<td>1(2)*</td>
<td>16.7</td>
<td>5(1)*</td>
</tr>
<tr>
<td>Lack of motivation</td>
<td>0</td>
<td>0.0</td>
<td>5(1)</td>
</tr>
<tr>
<td>Fear of campus/faculty/unknown</td>
<td>1(2)</td>
<td>16.7</td>
<td>1(4)</td>
</tr>
<tr>
<td>Motivation</td>
<td>2(1)</td>
<td>33.3</td>
<td>0</td>
</tr>
<tr>
<td>Self-discipline</td>
<td>0</td>
<td>0.0</td>
<td>2(3)</td>
</tr>
<tr>
<td>Uncertainty about staying in profession</td>
<td>1(2)</td>
<td>16.7</td>
<td>0</td>
</tr>
<tr>
<td>Positive attitude toward learning</td>
<td>1(2)</td>
<td>16.7</td>
<td>0</td>
</tr>
<tr>
<td>Dislike of math courses</td>
<td>0</td>
<td>0.0</td>
<td>1(4)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6</td>
<td>100.0</td>
<td>14</td>
</tr>
</tbody>
</table>

*Numbers in parentheses indicate rank order of each subcategory.*

**Actually-Experienced Informational Barriers**

Informational barriers that participant ART's and nonparticipant ART's experienced that prevented participation in a nontraditional ART progression program
are displayed in Table 24. The following informational barriers emerged after the data were coded:

1) **General lack of knowledge about programs** - This subcategory included all responses that pertained to lack of awareness of the availability of ART progression programs, lack of specific, detailed information, etc.

2) **Lack of knowledge about RRA job opportunities** - This subcategory included all responses that pertained to uncertainty/lack of information about whether educational participation will pay off in terms of a better (RRA-level) job.

3) **Unsure of degree requirements** - This subcategory included all responses that pertained to an individual not knowing if they have courses that already meet some of the degree requirements, or of uncertainty about classes that are required and equivalents at local schools.

4) **Lack of knowledge about support programs** - This subcategory included all responses that pertained to lack of knowledge about how to complete required courses at local colleges/universities. Included were such responses as: "no local classes available to my
knowledge", "unsure of how and where I can complete courses", etc.

5) Lack of advisor/counselor support - This subcategory included all responses that pertained to inability of an individual to obtain information and support from an advisor or counselor.

6) Unsure of application of learning to present job - This subcategory included all responses that pertained to lack of knowledge about the connection between learning derived from an ART progression program and the work in which the individual is involved. (Some responses cited included "not sure whether an RRA credential was really important to me").

Participant ART's only cited two informational barriers that they experienced and each was cited once. These informational barriers were: "Unsure of degree requirements", and "General lack of knowledge about program".

Nonparticipant ART's cited "Lack of knowledge about RRA job opportunities" as the most important informational barrier that they experienced. Four (36.4%) of the responses pertained to this subcategory. The second most important informational barrier for
nonparticipant ART's was "General lack of knowledge about nontraditional programs". (Three or 27.3% of the informational responses pertained to this subcategory.) All other informational subcategories were cited once.

Table 24
ACTUALLY-EXPERIENCED INFORMATIONAL BARRIERS THAT PREVENTED ART PARTICIPATION IN A NONTRADITIONAL ART PROGRESSION PROGRAM

<table>
<thead>
<tr>
<th>Informational Barriers</th>
<th>Participant ART's</th>
<th>Nonparticipant ART's</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>Lack of knowledge about RRA job opportunities</td>
<td>0</td>
<td>0.0</td>
<td>4(1)</td>
</tr>
<tr>
<td>General lack of knowledge about program</td>
<td>1(1)*</td>
<td>50.0</td>
<td>3(2)</td>
</tr>
<tr>
<td>Unsure of degree requirements</td>
<td>1(1)</td>
<td>50.0</td>
<td>1(3)</td>
</tr>
<tr>
<td>Lack of knowledge about support programs</td>
<td>0</td>
<td>0.0</td>
<td>1(3)</td>
</tr>
<tr>
<td>Lack of advisor/counselor support</td>
<td>0</td>
<td>0.0</td>
<td>1(3)</td>
</tr>
<tr>
<td>Unsure of application of learning to present job</td>
<td>0</td>
<td>0.0</td>
<td>1(3)</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>100.0</td>
<td>11</td>
</tr>
</tbody>
</table>

*Numbers in parentheses indicate rank order of each subcategory.

Summary of Subsidiary Research Question Eight

Subsidiary research question eight provided information about barriers that ART's have personally
(actually) experienced that have prevented them from participation in a nontraditional ART progression program. Overall, actually-experienced barriers were somewhat similar between the two groups. Situational barriers accounted for the largest percentage of barriers for both groups, followed by institutional barriers. Dispositional and informational barriers accounted for a small percentage of barriers for both groups. The situational subcategory of "work obligations" was cited most frequently by both participant and nonparticipant ART's. "Cost" ranked second as a situational barrier for participant ART's while "Family obligations" ranked second as a situational barrier for nonparticipant ART's. "Family" was ranked third by nonparticipant ART's. "Time" was cited as a fourth major barrier by both groups. Nonparticipant ART's cited a broader range of situational barriers than did participant ART's.

The primary institutional barrier subcategory cited by participant ART's was "Length of Program". Nonparticipant ART's cited "Distance" as the major institutional barrier subcategory.

"Motivation" was cited by participant ART's as the most important dispositional barrier subcategory whereas,
conversely, "lack of desire/motivation" and "RRA not important to me" were cited as the most important dispositional barrier subcategories by nonparticipant ART's. "Lack of knowledge about RRA job opportunities" was cited by nonparticipant ART's as the most important informational barrier subcategory. Participant ART's cited few informational barriers.

Subsidiary Research Question Nine

Subsidiary research question nine was posed to establish the kinds of barriers ART's believe exist for an ART trying to enter a nontraditional ART progression program. The answer to this question provides information about the perceived (as compared to actual) barriers that both participant ART's and nonparticipant ART's believe exist for all ART's who try to enroll in a nontraditional ART progression program.

Subsidiary research question nine is stated as follows:

What are the barriers that ART's believe exist for an ART trying to enter a nontraditional ART progression program and how do these barriers differ between: a) participant ART's; and, b) nonparticipant ART's?

Frequencies and percentages of perceived barriers to participation in a nontraditional ART progression program
are displayed in Table 25 for participant ART's and nonparticipant ART's. Overall, 229 barriers were cited as ones which ART's perceived exist for all ART's that prevent participation in a nontraditional ART progression program. The four major barrier categories of situational, institutional, dispositional and informational were ranked similarly to subsidiary research question eight (actual barriers). Situational barriers accounted for the largest percentage (63.0% for participant ART's and 64.6% for nonparticipant ART's) of perceived barriers. Institutional barriers were cited as the second major barrier category for both groups (24.1% for participant ART's and 20.6% for nonparticipant ART's). Dispositional barriers were cited as the third most important barrier category for the participant ART's (9.3%) whereas, informational barriers were cited as the third most important barrier category for nonparticipant ART's. (Eight percent of the total responses for this group were informational). These last two categories were reversed for both groups; informational barriers were cited least frequently by participant ART's (3.7%) and dispositional barriers were cited least frequently by nonparticipant ART's (6.9%).
Table 25
SUMMARY OF PERCEIVED BARRIERS THAT PREVENT ART PARTICIPATION IN A NONTRADITIONAL ART PROGRESSION PROGRAM

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Participant ART's</th>
<th>Nonparticipant ART's</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>Situational</td>
<td>34(1)*</td>
<td>63.0</td>
<td>113(1)*</td>
</tr>
<tr>
<td>Institutional</td>
<td>13(2)</td>
<td>24.1</td>
<td>36(2)</td>
</tr>
<tr>
<td>Dispositional</td>
<td>5(3)</td>
<td>9.3</td>
<td>12(4)</td>
</tr>
<tr>
<td>Informational</td>
<td>2(4)</td>
<td>3.7</td>
<td>14(3)</td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>100.0</td>
<td>175</td>
</tr>
</tbody>
</table>

*Numbers in parentheses indicate rank order of each category.

Tables 26-29 display frequencies and percentages of subcategories for each major perceived barrier category for participant ART's and nonparticipant ART's.

**Perceived Situational Barriers**

Perceived situational barriers for participant and nonparticipant ART's are displayed in Table 26.

Participant ART's reported 34 perceived situational barriers and nonparticipant reported 113 perceived situational barriers for a total of 147 perceived situational barriers. Subcategories similar to those defined in subsidiary research question eight were used to group responses.
Both the participant ART and nonparticipant ART groups cited situational subcategory barriers in identical order of importance as follows (from most important situational subcategory to least important situational subcategory): "Work obligations" (38.2% of the situational responses for participant ART's, and 26.5% of the situational responses for nonparticipant ART's); "Cost" (26.5% of the situational responses for participant ART's and 25.7% of the responses for nonparticipant ART's); "Family obligations" (20.6% of the responses for participant ART's and 23.9% of the responses for nonparticipant ART's); "Time" (8.8% of the responses for participant ART's and 18.6% of the responses for nonparticipant ART's). For the fifth most important perceived situational subcategory, participant ART's cited "Health" (5.9% of the responses) and nonparticipants cited "Age" (2.7% of the situational responses). "Health" was cited as the sixth barrier by nonparticipant ART's and accounted for 1.8% of the responses and "Other" barriers accounted for 0.9% of the responses for this group.
Table 26

PERCEIVED SITUATIONAL BARRIERS THAT PREVENT PARTICIPATION IN A NONTRADITIONAL ART PROGRESSION PROGRAM

<table>
<thead>
<tr>
<th>Situational Barrier</th>
<th>Participant ART's</th>
<th>Nonparticipant ART's</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>Work</td>
<td>13(1)*</td>
<td>38.2</td>
<td>30(1)*</td>
</tr>
<tr>
<td>Cost</td>
<td>9(2)</td>
<td>26.5</td>
<td>29(2)</td>
</tr>
<tr>
<td>Family</td>
<td>7(3)</td>
<td>20.6</td>
<td>27(3)</td>
</tr>
<tr>
<td>Time</td>
<td>3(4)</td>
<td>8.8</td>
<td>21(4)</td>
</tr>
<tr>
<td>Health</td>
<td>2(5)</td>
<td>5.9</td>
<td>2(6)</td>
</tr>
<tr>
<td>Age</td>
<td>0</td>
<td>0.0</td>
<td>3(5)</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0.0</td>
<td>1(7)</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
<td>100.0</td>
<td>113</td>
</tr>
</tbody>
</table>

*Numbers in parentheses indicate rank order of each subcategory.

Perceived Institutional Barriers

Frequencies and percentages of institutional barriers that participant ART's and nonparticipant ART's perceived to exist for all ART's are displayed in Table 27. Subcategories similar to those defined in subsidiary research question eight were used to group responses.

A total of 49 responses was cited as institutional barriers (participant ART's cited 13 responses and nonparticipant ART's cited 26 responses). There were some differences in perception between participant ART's
and nonparticipant ART's as to the order of importance of perceived institutional barrier subcategories.

Participant ART's responded that "Length of the program" and "Heavy academic load" were the most important perceived institutional barrier subcategories for all ART's. (These response subcategories each accounted for 30.8% of the comments.) Nonparticipant ART's also responded that "Length of program" was a primary perceived institutional barrier subcategory but also believed that "Distance" was equally important as a perceived primary institutional barrier subcategory for all ART's. (Each subcategory accounted for 33.3% of the institutional responses.)

Participant ART's responded that "Program not flexible" (which accounted for 15.4% of the responses) was of next importance as a perceived institutional barrier subcategory. In comparison, nonparticipant ART's responded that "Course/Life Experience Equivalency" (which accounted for 19.4% of the responses) was the next perceived institutional barrier subcategory for all ART's.

The next most important perceived institutional barrier subcategories for participant ART's were
"Inconvenient times/locations/formats" (7.7% of the responses), "Distance" (7.7% of the responses), and "Scarcity of supporting schools" (7.7% of the responses). Only one person responded for each of these subcategories. Nonparticipant ART's responded that "Inconvenient times/locations of local programs" (5.6% of the responses) was of next importance as a perceived institutional barrier subcategory. "Scarcity of supporting schools or nontraditional programs", "Heavy academic load" and "Program not flexible" only were cited once each by nonparticipant ART's.

Table 27

PERCEIVED INSTITUTIONAL BARRIERS THAT PREVENT PARTICIPATION IN A NONTRADITIONAL ART PROGRESSION PROGRAM

<table>
<thead>
<tr>
<th>Institutional Barrier</th>
<th>Participant ART's</th>
<th>Nonparticipant ART's</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>f</td>
</tr>
<tr>
<td>Length of program</td>
<td>4(1)*</td>
<td>12(1)*</td>
<td>16(1)*</td>
</tr>
<tr>
<td>Distance</td>
<td>1(4)</td>
<td>12(1)</td>
<td>13(2)</td>
</tr>
<tr>
<td>Course/Life experience equivalency</td>
<td>0</td>
<td>7(3)</td>
<td>7(3)</td>
</tr>
<tr>
<td>Heavy academic load</td>
<td>4(1)</td>
<td>1(5)</td>
<td>5(4)</td>
</tr>
<tr>
<td>Inconvenient times/locations/format</td>
<td>1(4)</td>
<td>2(4)</td>
<td>3(5)</td>
</tr>
<tr>
<td>Program not flexible</td>
<td>2(3)</td>
<td>1(5)</td>
<td>3(5)</td>
</tr>
<tr>
<td>Scarcity of supporting schools or nontraditional program</td>
<td>1(4)</td>
<td>1(5)</td>
<td>2(7)</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>36</td>
<td>49</td>
</tr>
</tbody>
</table>

*Numbers in parentheses indicate rank order of each subcategory.
Perceived Dispositional Barriers

Frequencies and percentages of dispositional barriers that participant ART's and nonparticipant ART's perceived to exist for all ART's are displayed in Table 28. Subcategories similar to those defined in subsidiary research question eight were used to group responses. A total of 17 responses were cited (participant ART's cited five responses and nonparticipant ART's cited twelve responses.)

Two participant ART's responded that "Fear of campus/faculty/unknown" was a perceived dispositional barrier. One person responded to each of the following dispositional subcategories: "Uncertain about staying in profession"; "Uncertain about whether RRA is important to me"; and "Motivation".

Nonparticipant ART's perceived that the primary perceived dispositional barrier subcategory for all ART's was "Lack of motivation". (This subcategory accounted for six or 50.0% of the responses.)

"Uncertainty about whether RRA is important to me" (or, in some cases, this was stated as "RRA is not important to me") was cited by three of the nonparticipant ART's. "Fear of campus/faculty/unknown",
"Self-discipline", and "Lack of confidence in study skills" were each cited once by nonparticipant ART's.

Table 28
PERCEIVED DISPOSITIONAL BARRIERS THAT PREVENT PARTICIPATION IN A NONTRADITIONAL ART PROGRESSION PROGRAM

<table>
<thead>
<tr>
<th>Dispositional Barrier</th>
<th>Participant ART's</th>
<th>Nonparticipant ART's</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>Lack of motivation</td>
<td>0</td>
<td>0.0</td>
<td>6(1)*</td>
</tr>
<tr>
<td>Uncertain about whether RRA important to me</td>
<td>1(2)*</td>
<td>20.0</td>
<td>3(2)</td>
</tr>
<tr>
<td>Fear</td>
<td>2(1)</td>
<td>40.0</td>
<td>1(3)</td>
</tr>
<tr>
<td>Uncertain about staying in profession</td>
<td>1(2)</td>
<td>20.0</td>
<td>0</td>
</tr>
<tr>
<td>Motivation</td>
<td>1(2)</td>
<td>20.0</td>
<td>0</td>
</tr>
<tr>
<td>Self-discipline</td>
<td>0</td>
<td>0.0</td>
<td>1(3)</td>
</tr>
<tr>
<td>Lack of confidence in study skills</td>
<td>0</td>
<td>0.0</td>
<td>1(3)</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>100.0</td>
<td>12</td>
</tr>
</tbody>
</table>

*Numbers in parentheses indicate rank/order of each subcategory.

Informational Barriers

Frequencies and percentages of informational barriers that participant ART's and nonparticipant ART's perceived to exist for all ART's are displayed in Table 29. Subcategories similar to those defined in subsidiary research question eight were used to group responses.
A total of 16 responses were cited as informational barriers. Participant ART's responded two times and nonparticipant ART's responded 14 times. Participant ART's responded once for each of the following perceived informational barrier subcategories: "Unsure of requirements" and "General lack of knowledge about the program". Nonparticipant ART's responded that "General lack of knowledge about the program" (which accounted for six or 42.9% of the informational total responses) was the primary perceived informational barrier subcategory followed by "Lack of knowledge about RRA job opportunities" (four or 28.6% of the responses) and "Unsure of how to apply new learning to the present job" (two or 14.3% of the responses). The least important perceived informational barrier subcategories for nonparticipant ART's were "Unsure of degree requirements" and "Lack of knowledge about support programs". Each were cited once.
<table>
<thead>
<tr>
<th>Informational Barrier</th>
<th>Participant ART's</th>
<th>Nonparticipant ART's</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>General lack of knowledge about nontraditional programs</td>
<td>1(1)*</td>
<td>6(1)</td>
<td>7(1)</td>
<td>43.8</td>
</tr>
<tr>
<td>Lack of knowledge about RRA job opportunities</td>
<td>0</td>
<td>4(2)</td>
<td>4(2)</td>
<td>25.0</td>
</tr>
<tr>
<td>Unsure of degree requirements</td>
<td>1(1)</td>
<td>1(4)</td>
<td>2(3)</td>
<td>12.5</td>
</tr>
<tr>
<td>Unsure of how to apply new learning to present job</td>
<td>0</td>
<td>2(3)</td>
<td>2(3)</td>
<td>12.5</td>
</tr>
<tr>
<td>Lack of knowledge about support programs</td>
<td>0</td>
<td>1(4)</td>
<td>1(5)</td>
<td>6.3</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>14</td>
<td>16</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Numbers in parentheses indicate rank order of each subcategory.

Summary of Subsidiary Research Question Nine

Subsidiary research question nine established and compared for both study groups barriers that ART's perceive exist for all ART's trying to enter a nontraditional ART progression program. Overall, perceived barriers were somewhat similar between the two groups. Situational barriers accounted for the largest percentage of perceived barriers for both groups, and
institutional barriers accounted for the next largest percentage of perceived barriers for both groups. Both dispositional and informational barriers were cited less frequently by both groups. Nonparticipant ART's perceived that informational barriers were more important for all ART's than dispositional barriers whereas participant ART's perceived the reverse.

The situational subcategory of "Work obligations" was cited most frequently by both groups, followed by "Cost", "Family" and "Time", respectively.

Another situational barrier subcategory cited by participant ART's was "Health". Nonparticipant ART's cited "Age", "Health" and "Other Barriers" as additional situational barrier subcategories.

The primary institutional barrier subcategory cited by both participant and nonparticipant ART groups was "Length of the program", although nonparticipant ART's also believed that "Distance" was an equally important institutional barrier. Both groups differed regarding order of importance for the other cited perceived institutional barrier subcategories.

Nonparticipant ART's believed that "Lack of motivation" was the primary perceived dispositional
barrier subcategory, whereas participant ART's believed that "Fear of campus/faculty/unknown" was the primary perceived dispositional barrier.

Nonparticipant ART's believed that "Lack of general knowledge about the program" was the primary perceived informational barrier subcategory followed by "Lack of knowledge about RRA job opportunities" and "Unsure of how to apply new learning to present job", respectively. Participant ART's responded equally in two perceived informational barrier subcategories ("Unsure of degree requirements" and "General lack of knowledge about nontraditional programs").

Subsidiary Research Question Ten

Subsidiary research question ten was posed to establish the kinds of coping strategies ART's believe they could use to overcome the actual and perceived barriers to participation in a nontraditional ART progression program. (Participant ART's were asked to indicate the kinds of coping strategies they actually used to overcome these barriers.) This question was also posed to find out how the coping strategies differed between participant and nonparticipant ART's. The answers to these questions establish whether there are
qualitative reasons for why some ART's participate in nontraditional ART progression programs and some do not. Determining whether there are differences in coping strategies between participant ART's and nonparticipant ART's also serves to document methodologies for overcoming barriers to participation used by some ART's.

Subsidiary research question ten is stated as follows:

What are the coping strategies for overcoming actual and perceived barriers to participation suggested by: a) participant ART's and, b) nonparticipant ART's and how do the coping strategies differ between these groups?

Coping strategies by major barrier category are displayed in Table 30 for participant ART's and nonparticipant ART's. A total of 180 coping strategies were reported by both groups. (Participant ART's reported 43 coping strategies and nonparticipant ART's reported 137 coping strategies.)

Both groups most frequently reported coping strategies that were related to eliminating situational barriers (76.7% of responses for participant ART's and 51.1% of responses for nonparticipant ART's were reported to eliminate situational barriers). Participant ART's reported coping strategies that were related to
dispositional barriers next most frequently. (Eight or 18.6% of the responses reported by participant ART's were used to eliminate dispositional barriers to participation.) By comparison, nonparticipant ART's reported coping strategies that were related to institutional barriers next most frequently. (These responses accounted for 32.1% of the total coping strategies for nonparticipant ART's.)

Coping strategies suggested to eliminate institutional and informational barriers were not reported extensively by participant ART's. Coping strategies suggested to eliminate dispositional and informational barriers were not reported extensively by nonparticipant ART's.

Table 30

<table>
<thead>
<tr>
<th>Strategies Used to Overcome Barriers</th>
<th>Participant ART's</th>
<th>Nonparticipant ART's</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>Situational</td>
<td>33(1)*</td>
<td>76.7</td>
<td>70(1)*</td>
</tr>
<tr>
<td>Institutional</td>
<td>1(3)</td>
<td>2.3</td>
<td>44(2)</td>
</tr>
<tr>
<td>Dispositional</td>
<td>8(2)</td>
<td>18.6</td>
<td>16(3)</td>
</tr>
<tr>
<td>Informational</td>
<td>1(3)</td>
<td>2.3</td>
<td>7(4)</td>
</tr>
<tr>
<td>Total</td>
<td>43</td>
<td>100.0</td>
<td>137</td>
</tr>
</tbody>
</table>

*Numbers in parentheses indicate rank order of each subcategory.
Coping strategies by major barrier category and subcategory are displayed in Tables 31-34 for participant ART's.

Coping Strategies Used By Participant ART's to Overcome Situational Barriers

Coping strategies related to eliminating situational barriers (displayed in Table 31) were most frequently reported by participant ART's in the following two subcategories:

1) **Making work-related adjustments** - Fourteen (42.4%) of the situational coping strategies were reported in this subcategory. Participant ART's made radical adjustments in their work patterns in order to return to school. These changes included comments such as "found someone to manage my business", "cut back to part time at work", "resigned from my job", "asked employer to revamp vacation/sick time accrual program in such a way so that I could use three weeks per year for school and still have time to take a 'real' vacation"; "found a job to allow summers off and some tuition-free classes"; "overcompensated at work - i.e., worked extra-hard at work to get things caught up so that I could leave for three weeks each summer", "got a supportive boss who gave
me time off", "gained commitment from administration", "didn't take off for a few years to build up personal leave", etc.

2) **Personal and family sacrifices** - Eleven (33.3%) of the situational coping strategies related to making personal and family sacrifices. Again, participant ART's radically changed their personal lives including time spent with children and husbands and time spent in leisure activity pursuits. Coping strategies used by participant ART's included: "gained encouragement and moral support from family", "made adjustments in outside activity involvement", "learned to overlook a dusty house", "bought clothes and gave up sewing", "moved to the city to live simply and worked a lot of overtime", "made school a priority and let household chores go-hired a cleaning lady", "decided I would have less personal time for myself", "got children involved in my school so they knew what I was doing and why", etc.

Other subcategories that were reported by participant ART's were: "Taking occasional breaks from school", "using independent study option to allow less time to be spent away from family", "budgeting money", using time management skills to allow for study time",
"completing prerequisite course requirements before applying to the program to reduce the heavy academic load". One response was listed that stated "haven't overcome the barriers yet".

Table 31

COPING STRATEGIES USED BY PARTICIPANT ART'S TO OVERCOME SITUATIONAL BARRIERS

<table>
<thead>
<tr>
<th>Situational Coping Strategy</th>
<th>Participant ART's</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
</tr>
<tr>
<td>Work-related adjustments</td>
<td>14</td>
</tr>
<tr>
<td>Personal and family sacrifice</td>
<td>11</td>
</tr>
<tr>
<td>Budget</td>
<td>2</td>
</tr>
<tr>
<td>Use time management skills</td>
<td>2</td>
</tr>
<tr>
<td>Take occasional breaks from school</td>
<td>1</td>
</tr>
<tr>
<td>Use independent study option</td>
<td>1</td>
</tr>
<tr>
<td>Complete prerequisites before applying to reduce academic load</td>
<td>1</td>
</tr>
<tr>
<td>Haven't overcome barriers yet</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
</tr>
</tbody>
</table>

Coping Strategies Used by Participant ART's to Overcome Institutional Barriers

Coping strategies for reducing/eliminating institutional barriers are displayed in Table 32 for
participant ART's. Only one response "haven't overcome the challenge exam barrier yet" was listed.

Table 32
COPING STRATEGIES USED BY PARTICIPANT ART'S TO OVERCOME INSTITUTIONAL BARRIERS

<table>
<thead>
<tr>
<th>Institutional Coping Strategy</th>
<th>Participant ART's</th>
</tr>
</thead>
<tbody>
<tr>
<td>Challenge exams</td>
<td></td>
</tr>
<tr>
<td>(Haven't overcome barrier yet)</td>
<td>1  100.0</td>
</tr>
<tr>
<td>Total</td>
<td>1  100.0</td>
</tr>
</tbody>
</table>

Coping Strategies Used by Participant ART's to Overcome Dispositional Barriers

Coping strategies for reducing/eliminating dispositional barriers are displayed in Table 33 for participants. The most frequently cited strategy was "self-satisfaction/sense of worth" that enrollment in the program provided for participant ART's. Three (37.5%) of the coping strategies suggested to overcome dispositional barriers related to self-satisfaction/feelings of worth. Two (25.0%) responses were related to setting short and long term learning goals. One response also was made in each of the following dispositional subcategories: "maintained a sense of humor"; "overcame fear of strange place/failure"; "adopted positive attitude toward..."
learning". Some of the individual comments made by participant ART's that related to coping strategies designed to eliminate dispositional barriers included "I just keep thinking this is going to be worth it!"; "I decided that whether I was going to continue working in Medical Records long term or not, I should obtain my RRA for self-satisfaction", "Going back to school became worth the risk of failure", "I always have a 'Plan B' ... I've changed to plans 'C' through 'H' as well, but I persevered", "I only measure the amount of school I have left by each class ...", "There was a point in my life when I was ready", etc.

<table>
<thead>
<tr>
<th>Dispositional Coping Strategy</th>
<th>Participant ART's f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-satisfaction/sense of worth/readiness</td>
<td>3</td>
<td>37.5</td>
</tr>
<tr>
<td>Set learning goals/long and short term</td>
<td>2</td>
<td>25.0</td>
</tr>
<tr>
<td>Sense of humor</td>
<td>1</td>
<td>12.5</td>
</tr>
<tr>
<td>Overcame fear of failure/strange places</td>
<td>1</td>
<td>12.5</td>
</tr>
<tr>
<td>Adopted positive attitude toward learning</td>
<td>1</td>
<td>12.5</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Coping Strategies Used by Participant ART's to Overcome Informational Barriers

Coping strategies used by participant ART's to overcome informational barriers are displayed in Table 34. Only one response was listed that pertained to eliminating informational barriers. This response was "obtained counseling from a local school".

<table>
<thead>
<tr>
<th>Informational Coping Strategy</th>
<th>Participant ART's</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counseling obtained</td>
<td>1 100.0</td>
</tr>
<tr>
<td>Total</td>
<td>1 100.0</td>
</tr>
</tbody>
</table>

Coping Strategies Suggested by Nonparticipant ART's to Overcome Situational Barriers

Nonparticipant ART's, in general, suggested similar coping strategies in each barrier category, with some exceptions. Coping strategies suggested by nonparticipant ART's to overcome situational barriers are displayed in Table 35. This group listed "investigating financial opportunities (including find a better job)" as the primary coping strategy to eliminate a situational
barrier. Nineteen (27.1%) of the responses were related to this coping strategy subcategory. This was closely followed by the subcategory "Wait until children are older". Almost twenty-six percent of the coping strategies designed to eliminate situational barriers pertained to this subcategory.

"Reducing working hours/responsibilities" accounted for the next most frequent coping strategy subcategory (12 or 17.1% of the situational coping strategies pertained to this subcategory). Other situational coping strategies listed included the following categories, in order of importance: "Obtain family support" (8.6%); "Obtain work support" (7.1%); "Investigate college close by" (7.1%); "use better time management skills" (4.3%); and "move/relocate to get an RRA job or be closer to a school" (2.9%). As with the participant ART group, a small number of nonparticipants indicated responses dealing with not being able to overcome barriers to participation. These responses are not reported because there was not enough data to make a qualitative judgement.
Coping Strategies Suggested by Nonparticipant ART's to Overcome Institutional Barriers

Coping strategies suggested by nonparticipant ART's for overcoming institutional barriers are displayed in Table 36. A large majority (36 or 81.8%) of the responses suggested that the adult education institution "offer a home study program/offer program at local schools". This strategy relates to removing one of the major institutional barriers, that of "distance", cited by nonparticipant ART's. Five, or 11.4%, of the
responses pertained to the institution "offering a tuition payment plan". Other institutional coping strategy subcategories listed by nonparticipant ART's were: "give more credit for life experiences" (4.5%) and "create networking support system" (2.3%).

Table 36

<table>
<thead>
<tr>
<th>Institutional Coping Strategy</th>
<th>Nonparticipant ART's</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offer home study/local program/alternate formats</td>
<td>f=36 81.8</td>
</tr>
<tr>
<td>Offer tuition reimbursement/lower cost</td>
<td>f=5 11.4</td>
</tr>
<tr>
<td>Give more credit for Life Experience</td>
<td>f=2 4.5</td>
</tr>
<tr>
<td>Create network support system</td>
<td>f=1 2.3</td>
</tr>
<tr>
<td>Total</td>
<td>f=44 100.0</td>
</tr>
</tbody>
</table>

Coping Strategies Suggested by Nonparticipant ART's to Overcome Dispositional Barriers

Coping strategies suggested by nonparticipant ART's for overcoming dispositional barriers to participation are displayed in Table 37. Sixteen responses pertained to the dispositional barrier category. The two major subcategories listed were "become more ambitious/motivated/determined/less lazy" and "I don't
view nonparticipation as a barrier to be overcome”. These subcategories accounted for eight (50.0%) and five (31.3%) of the total responses in the dispositional coping strategy category. "Make decisions about future goals/learning" was cited three times and accounted for 18.8% of the dispositional coping responses.

Table 37
COPING STRATEGIES SUGGESTED BY NONPARTICIPANT ART'S TO OVERCOME DISPOSITIONAL BARRIERS

<table>
<thead>
<tr>
<th>Dispositional Coping Strategy</th>
<th>Nonparticipant ART's</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
</tr>
<tr>
<td>Become more motivated</td>
<td>8</td>
</tr>
<tr>
<td>Don't view nonparticipation as a barrier</td>
<td>5</td>
</tr>
<tr>
<td>Make decisions about future goals/learning</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
</tr>
</tbody>
</table>

Coping Strategies Suggested by Nonparticipant ART's to Overcome Informational Barriers

Coping strategies suggested by nonparticipant ART's for overcoming informational barriers to participation are displayed in Table 38. Seven responses pertained to the informational barrier category. Three (42.9%) of the total informational responses referred to "obtaining general information about the program", two (28.6%) of
the total informational responses referred to "finding out the classes needed", and two (28.6%) of the total informational responses referred to "obtaining information about RRA positions".

Table 38
COPING STRATEGIES USED BY NONPARTICIPANT ART'S TO OVERCOME INFORMATIONAL BARRIERS

<table>
<thead>
<tr>
<th>Informational Coping Strategy</th>
<th>Nonparticipant ART's</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obtain general information about program</td>
<td>3</td>
</tr>
<tr>
<td>Find out classes needed</td>
<td>2</td>
</tr>
<tr>
<td>Obtain information about RRA positions</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
</tr>
</tbody>
</table>

Summary of Research Question Ten

Subsidiary research question ten evaluated the kinds of coping strategies used by both participant and nonparticipant ART's to eliminate barriers to participation in a nontraditional ART progression program. Differences in coping strategies between the two groups were also evaluated.

Coping strategies to overcome situational barriers were listed most frequently by both participant and nonparticipant ART's. Participant ART's next listed
coping strategies related to dispositional barriers whereas nonparticipant ART's next listed coping strategies related to institutional barriers.

"Work-related adjustments" and "Personal and family sacrifices" accounted for the first and second most frequently cited situational subcategory strategies for participant ART's whereas "investigate scholarship/money options", and "wait until children are older" accounted for the first and second most frequently cited situational subcategory strategies for nonparticipant ART's.

Participant ART's listed few coping strategies designed to overcome institutional and informational barriers. "Self-satisfaction" was the most frequently cited dispositional strategy subcategory for participant ART's.

After situational coping strategies, nonparticipant ART's next listed coping strategies designed to overcome institutional barriers. A large majority of the responses pertained to the institution "offering a home study program or program at a local school".

Central Research Question

The central research question of this study is:
Are particular locus of control orientations, achievement motivations, barriers to participation, and strategies for coping with barriers to participation associated with participation/nonparticipation and persistence in a nontraditional medical record administration program?

This study addressed ten subsidiary questions related to needs, beliefs, barriers to participation and coping strategies to deal with barriers in order to establish an answer to the central research question.

The answer to research question one established that locus of control orientation is not a useful construct to use in differentiating participation/nonparticipation in a nontraditional medical record administration program.

The answer to research question two established that achievement motivation is a useful construct to use in differentiating ART's who participate/do not participate in a nontraditional medical record administration program.

The answer to research question three established that locus of control orientation is not a useful construct to use in differentiating ART's who persist/do not persist (as measured in this study) in a nontraditional medical record administration program.
The answer to research question four established that achievement motivation is not a useful construct to use in differentiating ART's who persist/do not persist (as measured in this study) in a nontraditional medical record administration program.

The answer to research question five established that, for all three study groups (participant ART's, nonparticipant ART's, and nonparticipant ART's with college), there was a statistically significant negative relationship between locus of control orientation and achievement motivation. It was found that, as locus of control scores decreased (or individuals became more internal) achievement motivation scores increased (individuals appeared to possess a higher need to achieve).

The answer to research question six established that, in a large sample, such as the nonparticipant ART group, there is a statistically significant relationship between age of an ART and locus of control orientation. As the nonparticipant ART's ages increased, their locus of control scores decreased (i.e., they became more internal). The degree of association was found to be low. Although a similar relationship between age and
locus of control was found for participant ART's and nonparticipant ART's with college, this relationship was not significant in either case.

The answer to research question seven established that both participant ART's and nonparticipant ART's perceived in approximately equal proportions, existing barriers to participation in a nontraditional medical record administration program. Approximately half of both groups believed that barriers existed to prevent participation and approximately half did not believe that barriers existed.

The answer to research question eight established that both participant and nonparticipant ART's experienced similar actual barriers to participation. Situational and institutional barriers accounted for the primary and secondary experienced barriers to participation for both participant and nonparticipant ART's. Within the situational barrier category, "work obligations" and "cost", respectively were cited most often by participant ART's while "work obligations" and "family obligations" were cited most often by nonparticipant ART's. The primary institutional barrier cited by nonparticipant ART's was "distance" whereas
participant ART's cited "length of program" as the primary institutional barrier they experienced. Dispositional and informational barriers accounted for a small percentage of total barriers actually experienced by both participant ART's and nonparticipant ART's.

The answer to research question nine established that perceived barriers to participation were somewhat similar between participant ART's and nonparticipant ART's. Situational barriers accounted for the largest percentage of perceived barriers for both groups, followed by institutional barriers. Informational barriers were more important to nonparticipant ART's whereas dispositional barriers were more important to participant ART's. For perceived situational barriers, both groups cited the subcategories of "work obligations", "cost", "family obligations", and "time" in similar order of importance. Both groups cited "length of program" as the primary perceived institutional barrier, although nonparticipant ART's believed that "distance" was equally important and participant ART's believed that "heavy academic load" was equally important. Dispositional and informational barriers were not cited as often as situational and institutional
barriers as perceived barriers to participation for all ART's.

The answer to research question ten established that, although both actual barriers (question eight) and perceived barriers (question nine) were somewhat similar for participant ART's and nonparticipant ART's, coping strategies suggested to overcome these barriers differed for both groups. Although both groups most frequently suggested coping strategies designed to eliminate situational barriers, participant ART's also tended to suggest more coping strategies that focused on changing their attitudes (dispositions) whereas nonparticipant ART's tended to suggest coping strategies that focused on the adult education institution effecting changes to eliminate barriers to participation. In addition, while both groups suggested similar strategies for eliminating situational barriers, participant ART's tended to actually carry out (enact) the strategies by effecting major changes in their lifestyles.

Summary

Ohio ART's participating in a nontraditional medical record administration program and Ohio ART's who did not participate in this program were surveyed to determine,
1) locus of control orientations; 2) achievement motivation; 3) barriers to participation (both actual and perceived); 4) coping strategies used/suggested to overcome barriers to participation; and, 5) demographic characteristics. It was found that achievement motivation was useful in differentiating those ART's who participate/do not participate in a nontraditional medical record administration program whereas locus of control orientation was not. Neither achievement motivation nor locus of control were found to be useful in differentiating ART's who persisted/did not persist in a nontraditional medical record administration program using the previously defined measures of persistence. Actual and perceived barriers to participation were somewhat similar for both participants and nonparticipants, but coping strategies differed between the two groups. Participant ART's reported more coping strategies that focused on changing their attitudes (dispositions) whereas nonparticipant ART's reported more coping strategies that focused on the adult education institution effecting changes to eliminate barriers to participation. Participant ART's also carried out their coping strategies designed to eliminate situational
barriers to participation by making major changes in their lifestyles to accommodate participation in a nontraditional medical record administration education program.
CHAPTER V
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

A summary of the research conducted is provided in this chapter. Conclusions drawn from the major findings of the study are discussed. The chapter ends with recommendations for applications of the research findings and recommendations for future research.

Summary

The purpose of this study was to determine which belief orientations (loci of control), achievement needs (achievement motivations), barriers to participation, and strategies for coping with these barriers are associated with ART's who participate and persist and ART's who do not participate in a nontraditional ART progression program. Previous research in the general area of adult education, and specifically, in the medical record field has not concentrated on personality variables that might differentiate those adults who participate and persist in educational activities. Knowledge about characteristics of ART's who enroll and persist and ART's who do not enroll in existing nontraditional ART progression programs can assist educational program planners in making sounder decisions regarding marketing,
recruitment, counseling, and curriculum design for nontraditional ART progression programs.

Two samples were chosen for this study: Ohio ART's who participated in The Ohio State University Nontraditional Medical Record Administration Program during Summer, 1988 or who were enrolled in the program and active ART's from Ohio who did not participate in the program. The first sample was purposive in that all Ohio ART's participating in the Nontraditional Medical Record Administration Program were chosen to be studied. The second sample was a simple random one. Data were collected by survey methods to determine 1) locus of control orientation scores; 2) achievement motivation scores; 3) actually-experienced barriers to participation; 4) perceived barriers to participation; 5) coping strategies suggested or used to overcome barriers to participation, and 6) demographic characteristics. Participants were compared to nonparticipants to determine if differences existed regarding the above study characteristics.

Conclusions

Ten subsidiary research questions were asked to determine the answer to the central research question that asked which belief orientations, achievement needs,
barriers to participation, and strategies for coping with those barriers are associated with ART's who participate and persist and ART's who do not participate and persist in a nontraditional ART progression program. Each major characteristic studied is presented and conclusions from subsidiary research questions that pertain to each study characteristic are discussed. The central research question is discussed last.

Locus of Control Orientation

The analysis concerning the characteristic of locus of control orientation as it relates to participation in an adult education activity determined that there was no statistically significant difference in locus of control orientation among participant ART's, nonparticipant ART's, and nonparticipant ART's with college. Previous research, specifically in the area of educational participation, has shown contradictory results, with some studies concluding that locus of control orientation is associated (Dolphin, 1986; Gemmil, et. al., 1982; Giles, 1985; and Levine and Taub, 1979) with participation and other studies concluding that it is not (Adkins, 1981; Drobnies, 1984; Falconer, 1974). Results from this study do not support findings that there are differences in locus of control orientation between participants and
nonparticipants in an adult education activity. It appears that in the adult ART population in Ohio, there are no significant differences in this personality characteristic between participants and nonparticipants in a nontraditional educational program. This is probably so because of the generalized nature of the Rotter Internal-External Control Scale. Phares (1976) has commented that, while the generalized locus of control scale is helpful in describing the "average" locus of control scores for individuals across a variety of situations, it may fail to predict individuals' behavior in any one situation. A more specific scale in which items are related to the specific situation would be more useful as a differentiator of participation in an adult education activity.

It is interesting to note that mean locus of control orientation scores for all three groups showed that all three groups could be characterized as fairly "internal" in their locus of control orientations when compared to Rotter's (1966) more internal scores than when compared to the recent, more external mean scores reported by later researchers (Cellini and Kantorowski, 1982; and Little, 1979).
Mean scores of the three ART groups in this study do not appear to support Rotter's (1975) and Phares' (1976) comments and other researchers' findings (Cellini and Kantorowski, 1982; Little, 1979) that scores are becoming more external. It appears that ART's in Ohio generally possess a fairly internal locus of control orientation as compared to more recently reported means, and do not conform to the trend toward externality supported in the literature.

Although no differences in locus of control orientations were found between participant and nonparticipant ART's, it is helpful for educators to understand ART's orientations in order to counsel and advise students and to market nontraditional ART progression programs as well as to plan educational activities that are geared toward internal orientations.

Subsidiary research question three assessed whether locus of control orientation was a useful differentiator of persistence in a nontraditional medical record administration program. Persistence/nonpersistence was operationalized as: 1) enrollment in the first summer phase of the nontraditional medical record administration program (i.e., students who have not yet persisted), 2) enrollment in the second and third phases of the
nontraditional medical record administration program (students who have persisted); and 3) completion by nonparticipating ART's of a four-year baccalaureate, masters, or doctoral degree program (individuals who have persisted). The results of the analysis concerning locus of control orientation as it relates to persistence was not statistically significant. It is possible that no differences between persisters and nonpersisters were found because the measure of persistence did not adequately reflect true persistence/nonpersistence in an educational program. A more useful measure of persistence would be students who complete a nontraditional medical record administration program or another degree program and students who have dropped out of a nontraditional medical record administration program or another degree program. Study of completers and drop-outs was not possible in this study because of the low numbers of both types of subjects.

Achievement Motivation

The analysis of the characteristic of achievement motivation in relation to participation (subsidiary research question two) was statistically significant. The statistically significant difference was found between participant ART's and nonparticipant ART's.
There appears to be a significant difference in achievement motivation levels between ART's who participated in a nontraditional educational program and ART's without a degree who did not participate in such a program.

It is, again, interesting to note that mean achievement motivation scores for all three study groups were considerably higher than the norms originally reported by Mehrabian and Bank (1978). ART's in Ohio generally appear to possess a higher degree of achievement motivation, as compared to other college-aged populations, probably because these subjects are employed adults, and, as such, possess a higher need to achieve than might a typical group of college-age students.

The analysis of the characteristic of achievement motivation in relation to persistence (subsidiary research question four) was not statistically significant. Again, as in subsidiary research question two, the measure of persistence/nonpersistence might not have been strong enough to detect differences among the study groups. It would be more useful to assess achievement motivation of adult completers and drop-outs of an educational program.
The Relationship Between Achievement Motivation and Locus of Control Orientation

Analysis of the relationship between the two characteristics of achievement motivation and locus of control orientation (subsidiary research question five) showed that there was a statistically significant low to moderate negative correlation between locus of control orientation and achievement motivation for all three study groups. It was found that, as individuals' locus of control orientations became more internal, their achievement motivation increased. This finding is consistent with previous findings that describe the relationship between the two variables as modest and nonlinear. (Enders, 1977; Mehrabian and Bank, 1975; Phares, 1976; Rotter, 1966). However, since all three negative correlations were within the low to moderate ranges, they must be viewed with caution as predictors of each other. In Ohio ART's, the relationship between locus of control and achievement motivation appears to be moderate at best.

It is possible, as suggested by previous researchers (Batlis and Waters, 1973; Durand and Shea, 1974; Feather, 1967; Wolk and DuCette, 1973; Wuensch and Lao, 1976), that locus of control acts as a moderator variable in the
relationship between achievement motivation and participation in a nontraditional ART progression program. In other words, as Wolk and DuCette (1973) suggest, ART's who possess a high achievement need who also are internal in their control orientations might be more apt to participate in a nontraditional ART progression program than ART's who are less motivated and more external. Used together, these two characteristics might have better predictive power of an achievement behavior such as participation in an adult educational activity. As suggested in the literature, use of both locus of control and achievement motivation variables enhance prediction of achievement-related behaviors such as participation and persistence in a nontraditional adult education program.

Locus of Control and Age

Analysis of the relationship between an ART's age and locus of control orientation (subsidiary research question six) showed for all three study groups, that there was a trend toward increasing internality as ART's age. However, these results showed slight to low associations and the only significant result was found for the nonparticipant ART group. Significance for the nonparticipant ART group is most likely due to the larger
number of subjects in that group, therefore caution is suggested when using age to predict locus of control orientation in an ART population. The slight to low correlations, and lack of statistical significance in two of the three study groups support the findings of Weiss and Stipek (1982), in whose meta-analysis of thirty-three developmental studies, mixed results or no significant differences were found in approximately half of the studies.

Barriers to Participation

Findings related to actual and perceived barriers to participation (subsidiary research questions seven, eight and nine) showed that for both participant and nonparticipant ART's, equal proportions perceived that there were barriers to participation, and actual and perceived barriers cited were somewhat similar for both groups in order of importance. Situational barriers were found to be the most frequently actually-experienced and perceived barriers by both groups. Institutional, dispositional, and informational barriers were less important to both participant and nonparticipant ART's. Similar findings have previously been reported in the literature (Cross, 1981; Hancock, 1983; Johnstone and Rivera, 1965). In both Hancock's and Johnstone and
Rivera's studies, women were found to identify a large number of situational barriers, such as family responsibilities, cost, lack of time, etc. As in this study, previous studies have found that institutional and dispositional barriers are cited less frequently. The situational barrier of "time", although cited as most serious in other studies (Cross, 1977; Hancock, 1983) was not one of the two most frequently cited situational barriers found in this study, possibly because respondents in this study were asked to write open-ended responses and could be more specific than the quantified categories listed in Likert-type scales used in other studies. "Cost" as a major situational barrier for both participant ART's and nonparticipant ART's is supported by the literature. (Fisher-Thompson, 1980; Hancock, 1983). Nonparticipant ART's also believed that "distance" was the primary institutional barrier to participation. A similar findings by Hancock (1983) supports this finding.

It is interesting to note that for dispositional barriers, "motivation" was cited most frequently by both groups as an actually-experienced barrier. However, because open-ended answers were solicited, it was possible to analyze the qualitative nature of
respondents' answers. Qualitatively, the nonparticipant and participant ART groups differed in their approaches to motivation. While nonparticipant ART comments included "lack of motivation, enthusiasm, ambition and being lazy", participant ART comments included positive statements about motivation, such as "it can be done", "I have a personal commitment to learning", etc.

**Coping Strategies**

Although both participant and nonparticipant ART's most frequently listed coping strategies designed to overcome situational barriers, participant ART's next focused on changing their dispositional characteristics whereas nonparticipant ART's next focused on trying to change the adult education institution. Nonparticipant ART's tended to place more "responsibility" on the adult education institution for removing the barriers and participant ART's were more apt to take responsibility for removing the barriers to participation by making changes in their attitudes, motivations and beliefs about the educational experience. It is possible that the participant ART group, who possessed a higher need to achieve, found it easier to reach their goal of participation in the adult educational activity by making changes that were within their control, rather than by
trying to change the policies, procedures, and realities connected to the adult educational institution.

A second, striking difference in coping strategies between the participant ART and nonparticipant ART groups was the degree of change both groups suggested. Nonparticipant ART's did suggest some active coping strategies such as "relocating to find a better job", "reducing working hours", etc., but in reality, more passive coping strategies, such as "waiting until children are older/passage of time" were more frequently suggested. Participant ART's, in contrast, suggested active coping strategies, such as "reducing working hours - quitting jobs", "family sacrifices" (in time spent with family and in leisure activities, etc.), in order to cope with barriers to participation.

A third difference between the two groups was that participant ART's actually carried out the active coping strategies they suggested by making major life-style changes, whereas nonparticipant ART's did not make this commitment.

Because of the limited number of responses to the questions on barriers and coping strategies, the reported data in some of the subcategories should be viewed with
caution. Generalization to larger groups of ART's is somewhat limited.

In summary, it appears that achievement motivation, is more useful than locus of control orientation as a personality characteristic that differentiates whether ART's will have the necessary motivation to participate in a nontraditional medical record administration program. From results of this study, it can be concluded that Ohio ART's with a high need to achieve are motivated to make major lifestyle changes that are required in order to reduce and/or eliminate barriers to participation in an adult educational activity. Conversely, ART's who do not possess as high a need to achieve do not appear to be as motivated to make these major lifestyle changes.

Recommendations for Applications of Study Findings

The following application recommendations are made based upon the conclusions drawn from this study.

1. Adult educators/program planners in the field of medical record administration can use achievement motivation instruments in recruitment, counseling, and screening efforts in both medical record technology programs and in nontraditional ART progression programs to determine which ART candidates possess a strong need
to achieve. Once identified, these individuals may be expected to be the most successful in reducing and/or eliminating barriers to participation and persistence.

2. Adult educators/program planners in the field of medical record administration can also use locus of control instruments to further assess individuals who are found to possess a high need to achieve to determine whether these individuals are internal or external in their orientations. Knowledge of the locus of control orientations of individuals interested in the nontraditional medical record administration program can assist educators in designing learning events geared toward the type of control orientation individuals possess (i.e., learners with internal orientations might be more successful if matched with independent types of learning projects whereas externally-oriented learners might need more structured learning experiences.)

3. In order to increase the number of ART's participating in nontraditional medical record administration programs, adult educators need to institute counseling/support programs to encourage and assist nonparticipant ART's in overcoming barriers to participation that were found in this study. Such techniques as conferences, telephone support, mentoring
systems, financial aid seminars, loan and grant recruitment programs, etc. can be developed and offered to nonparticipant ART's.

4. Program planners can specifically reduce a major institutional barrier of "distance from the program" by offering ART progression programs in local community sites and by instituting more home study/independent study options for ART's.

5. Adult educators can ease work-related barriers as well as some cost-related barriers by creating liaisons with hospital administrators as the employers of ART's. Educators can work to a) make employers aware of the benefits that will accrue to the organization if the ART progresses to the administrative level and, b) assist students in obtaining educational funding through tuition reimbursement and other work-related funding mechanisms.

6. Most ART's are women and, as found in this study, these individuals experience conflicts between many roles (work, family, community, etc.). Adult educators can assist ART's, and women ART's in particular, by offering educational programs and advising and counseling sessions that address the areas of stress, role conflict, time management and burnout, and assist ART's in realizing how
these concerns relate to their growth and development as individuals and professionals.

Recommendations for Further Research

The following are areas in which future research can be conducted:

1. This study concentrated on one medical record administration progression program, including participants and nonparticipants. A replication of this study needs to be conducted using other nontraditional program participants and nonparticipants.

2. A study that examines achievement motivation and locus of control using a stronger measure of persistence as a dependent variable is necessary. Completers and dropouts of a program should be used as a dependent variable to measure persistence/nonpersistence in a nontraditional medical record administration program.

3. This study was descriptive in research design. The relationship between achievement and motivation and locus of control should be further investigated through the use of a research design in which locus of control can be measured as a moderating variable between achievement motivation and the achievement behavior of participation in a nontraditional adult education program.
4. The study of achievement motivation, locus of control, barriers and coping strategies in other health professions is needed to determine if professionals working in the same capacities in other allied health fields exhibit similar motivational characteristics and coping strategies as participant and nonparticipant ART's in this study.

5. A study is needed to determine if provision of support counseling to ART's has an impact on reduction/elimination of barriers to participation in a nontraditional medical record administration program.

6. To provide a more accurate picture of the achievement motives of ART's across the country, a study that investigates the achievement motivation levels of a random sample of all active ART's belonging to The American Medical Record Association is needed.

7. A comparison of achievement motivation levels, and locus of control levels between ART's and RRA's is needed to determine if proportionately more RRA's possess a high level of achievement motivation than do ART's. This type of study would assist in determination of whether RRA's become RRA's because they have a high need to achieve.
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