

Interviews as a Predictor of Success to Support Admission to Nursing School

by

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Abstract

Baccalaureate nursing programs are encouraged to provide increased numbers of graduates prepared to meet the future needs of healthcare. Limited access to nursing schools and unique cohort learning necessitates close scrutiny of potential students' qualifications. Acceptance of students with the highest probability of retention and success can potentially decrease student attrition from withdrawal or failure.

Personal and professional values derived over the course of life through experiences, environment, and culture are reflected in attitudes and patterns of behavior. A problem exists with evaluating non-academic characteristics of potential students. Carper's (1978) patterns of knowing (ethical, aesthetic, and personal) can be used as a method for identifying characteristics that individuals bring to nursing education in areas other than academic achievement (empirical) (Caper, 1978; Clements & Averill, 2004; Heath, 1998).

A retrospective longitudinal study design was used to answer the research questions and meet the goals of the study. Semi-structured interviews were viewed as a tool for evaluation of interpersonal relations, communication, future goals, understanding of nursing, leadership qualities, and overall demeanor (Trice, 2007) and were conducted for fall applicants to upper division baccalaureate nursing courses at one small public Southeastern School of Nursing in 2008 and 2009. The purposes of this study were to 1) evaluate data from student interviews to discover the significance of the interview

process in identifying characteristics other than academic achievement, and 2) evaluate correlation of pre-admission interview scores to retention and graduation of BSN students at a small Southeastern University school of nursing.

The current study found a statistically significant correlation between application GPA (ApplGPA) and final nursing GPA (NsgGPA) as well as HESI Exit Exam (E^2) scores, indicating that ApplGPA may predict successful completion of the nursing program (32.9%) and licensure exam. However, these grades do not provide insight into non-academic characteristics described by Carper's other three patterns of knowing (ethical, aesthetic, and personal) specific to the nursing professional. ApplGPA was a significant predictor of success in the nursing program (NsgGPA) but when average interview scores (AIS), used to assess non-academic characteristics, were added the ability to predict program completion increased to 51.5%. AIS were also found to be statistically significant in predicting development of professional characteristics in the area of communication (Comm).

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Chapter 1: Introduction

Nurse leaders describe a critical demand for baccalaureate nursing programs to provide increased numbers of graduates prepared to meet the future needs of healthcare (Newton, Smith, & Moore, 2007; Newton, Smith, Moore, & Magnan, 2007; Salder, 2003; Seago, Wong, Keane, & Grumbach, 2008; Seldomridge & DiBartolo, 2004). Measures must be taken by colleges and universities to investigate approaches which enhance admission procedures. These measures should focus on identifying students with an aptitude for completing the nursing education program, therefore improving graduation numbers.

It is not enough to increase numbers of graduates, without giving attention to students capable of achieving success on the national licensure exam for practice and competence in providing safe, holistic nursing care (Grainger & Bolan, 2006; Newton, Smith, & Moore, 2007; Sadler, 2003). Schools of nursing that do not produce nursing graduates who excel on the National Council Licensure Examination for Registered Nurses (NCLEX-RN) are at risk of losing accreditation (Newton, Smith, & Moore, 2007). The Bachelor of Science in Nursing (BSN) has been recommended as the entry level of professional nursing practice (American Association of Colleges of Nursing [AACN], 2002, 2011). Lack of successful graduates or those able to successfully pass licensure exams, decreases student attraction to baccalaureate nursing programs. Therefore faculty and administrators in nursing schools are motivated to select students

who are most likely to succeed in becoming a professional practicing nurse (Beeson & Kissling, 2001; Newton, Smith, & Moore, 2007).

Nursing has been considered a stable lifetime career. However, numbers of available nursing faculty to instruct the quantity of qualified applicants to nursing programs have decreased (Grainger & Bolan, 2006). Therefore entrance into nursing schools has become highly competitive. Limited access to nursing school and unique cohort learning necessitates close scrutiny of potential students' qualifications.

Acceptance of students with the highest probability of retention and success can potentially decrease student attrition from withdrawal or failure. Each vacancy creates a void in the class cohort, decreasing cost efficiency of providing nursing education and production of nurses to fill the demand. Retention and success have both monetary and societal benefits. Monetarily, institutions benefit from tuition, fees, and state and federal support which accompany higher graduation rates as well as more efficient use of funds. Societal benefits include production of contributing members of society, in turn decreasing social expenditures while supplying qualified nurses to meet the increasing demand (Gallard, Albritton & Morgan, 2010; Grainger & Bolan, 2006; Sadler, 2003; Van Bragt, Bakx, Bergen, & Croon, 2011).

Students who lack motivation, ability to critical think, or other behaviors necessary for successful development into a professional nurse use scarce resources. Faculty expend more energy, time, and money adjusting teaching strategies, exam preparation and analysis, and student mentoring for learners who may not become safe practitioners. Resources could be best focused for students with diverse backgrounds who are positively motivated to learn, with or without high academic achievement. The

challenge is how to best use resources to result in production of quality nursing professionals.

Nurse educators are challenged with producing professional graduate nurses capable of providing holistic quality care (AACN, 2011). Students possess personal and professional values derived over the course of life through experiences, environment, and culture. Nurse educators assist students to consider nursing's professional values. Values are demonstrated in attitudes and patterns of behavior. Professional values or standards are based on behaviors and attitudes important to a profession and provide a foundation for evaluating behaviors and characteristics consistent with these principles (Lin, Wang, Yarbrough, Alfred & Martin, 2010; Roth & Zlatic, 2009). Shultz (2009) describes this as the behavioral outcomes of attitudes which are affected by feelings and emotions. Affective characteristics are indicated by one's level of self-awareness and behaviors associated with professionalism (Emerson, 2007). Students must select how personal values can best align with those of the nursing profession as a component of becoming a nurse.

Values for the nursing profession have been stated by organizations such as the American Association of Colleges of Nursing (AACN), National Council of State Boards of Nursing (NCBN), American Nurses Association (ANA), National League for Nursing (NLN), and the International Council of Nurses (ICN). These essential professional values are outlined in a formal *Code of Ethics* and Standards of Practice (ANA, 2005). *The Code* provides guidance for nursing education, practice, and research. Nursing education has the responsibility to present professional values as a foundation for future

nurses who will ethically provide patient-centered care (ANA, 2005; ICN, 2006; Lin et al., 2010; Roth & Zlatic, 2009).

A problem exists with evaluating non-academic characteristics of potential students. Students begin nursing programs with patterns of knowing (or ways of understanding), grounded in academic and non-academic experiences. Barbara Carper (1978) described four fundamental patterns of knowing as vital for nurses: empirical, ethical, aesthetic, and personal knowing. These can be used as a method for identifying characteristics that individuals bring to nursing education in areas other than empirical academic achievement (Caper, 1978; Clements & Averill, 2004; Heath, 1998).

Knowledge needed for nursing include these four ways of knowing. Empirical knowing, such as that often used for admission into higher education programs is measured by strategies such as grade point average (GPA) and standardized tests (ACT, SAT, GRE, etc.). However, GPA and standardized tests merely provide an overview of the student's academic success and empirical knowledge up to that point (Mountford, Ehlert, Machell, & Cockrell, 2007). Some universities have added interviews and/or essays as requirements for admission to provide a deeper understanding of student characteristics for successful academic achievement along with student attributes that may contribute to development of professional expectations (Donaldson, McCallum, & Lafferty, 2010; Ehrenfeld & Tabak, 2000; McNelis et al., 2010; Mountford et al., 2007; Sadler, 2003). These pre-admission interviews serve to assist educators in the endeavor to retain and graduate students by admitting those most qualified in academic and non-academic abilities into higher education programs.

Completion of baccalaureate nursing programs requires acquisition of empirical knowing specific to the profession, as well as ethical, aesthetic, and personal knowing. Interviews and/or essays provide insight about personal motivation and characteristics that can influence persistence in developing professional skills and attitudes required for nursing. Nursing education involves acquisition of foundational knowledge and skills and an internalization of attributes valued by the nursing profession, specifically, values, beliefs, behaviors, and attitudes which form the basis for professional nursing practice (Emerson, 207; Roth & Zlatic, 2009).

Concern for understanding the roles, responsibilities, and professional expectations of students that are not measured by psychomotor skill performance or academic achievement prompted initiation of a pre-admission interview. In an attempt to prevent attrition, graduate successful students, and increase diversity, Auburn University at Montgomery School of Nursing began an interview process by following the example of the University of North Florida Brooks College of Health. The interview process attempts to assess non-academic factors as a portion of the admission process into upper division nursing courses in order to identify students committed to nursing even if not at the top of the academic scale (Trice, 2007).

Significance of the Study

Nursing education integrates empirical knowledge through awareness, analysis, and application of details presented throughout pre-nursing and nursing courses. Nursing as a discipline requires concurrent use of empirical, ethical, aesthetic, and personal knowing (Carper, 1978). These patterns of knowing promote development of professional nursing values, attitudes, and behaviors during classroom and clinical experiences (Roth

& Zlatic, 2009), and throughout a professional career. Students who demonstrate the patterns of knowing may have a stronger foundation on which essential professional behaviors can be developed.

Academic achievement, measured by GPA and standardized testing, provides evidence of empirical knowing. Non-academic characteristics of aesthetic, ethical, and personal knowing, are more challenging to discover because these attributes are less amenable to conventional measurements. Assessment strategies such as pre-admission interviews have been found to more accurately predict student performance and success than GPAs or standardized testing (Mountford et al., 2007). A face-to-face interview allows informed judgment of current knowledge and skills in interpersonal relations, communication, future goals, understanding of nursing, leadership qualities, and overall demeanor (Trice, 2007).

Purpose

The purposes of this study are to 1) evaluate data from student interviews to discover the significance of the interview process in identifying characteristics other than academic achievement, and 2) evaluate correlation of pre-admission interview scores to retention and graduation of BSN students in one University setting.

Research Questions

The research questions to be answered with this study include:

1. Do average interview scores (AIS), in addition to application grade point average (ApplGPA), assist in predicting retention and success in upper division nursing school as evidenced by the academic measurements or empirical

knowing with Health Education Systems, Inc. (HESI) Exit Exam (E^2) score(s) and GPA from nursing (NsgGPA) courses at graduation?

2. Do average interview scores (AIS) assist in predicting the development of professional characteristics which lead to the satisfactory performance in clinical courses measured by average preceptor evaluations (APS) and those specific for critical thinking (CT), communication (Comm), and professional behavior (PR)?

Methodology

The research was conducted using a retrospective longitudinal study design to answer the questions and meet the goals of the study. Semi-structured interviews were conducted for fall applicants to upper division baccalaureate nursing courses at Auburn University at Montgomery School of Nursing in 2008 and 2009. Students admitted into the nursing program were tracked and data at graduation were analyzed using SPSS software 15.0. The independent variables used to answer question one included interview scores and prerequisite GPAs and the dependent variables of HESI Exit Exam (E^2) scores and nursing GPA. Persistence in the program is measured in percentage of how many students complete the program. The independent variables for the second question were measured by successful completion of preceptorship based on an eight item evaluation tool. These scores provided insight into the development of academic and non-academic qualities necessary to become a professional nurse.

Limitations of the Study

Several limitations were identified during this study. These limitations will be discussed prior to examining the significance of findings from the study. This study was limited to a convenience sample of one group of nursing school applicants from one small public university in Alabama. This resulted in a limited sample size of 214 cases. Data was missing for 76 students regarding preceptor scores which decreased the sample size for question two to 138 students. The sample size surpassed the desired 10-15 cases per variable. Eight variables were used in this research making the desirable sample size between 80-110 cases. Although the sample size was sufficient for the number of variables used (question one, $n = 214$; question two, $n = 138$), the convenience provided a minimum representative sample of the population weakening the generalizability of the findings (Creswell, 2005).

The inequality of student characteristics was related to convenience sampling. However, the sample frequencies remained marginally consistent with the diversity of the university and population of all students declaring a nursing major within the university (see Table 3.1). The variance in ethnicity from overall undergraduate students compared to the current study sample can be explained by the percentage of unreported ethnicity in the university population. All students reported in the nursing sample were categorized in an ethnic group. In summary, the diversity of the sample was comparative to the population of declared nursing major students in the university and consisted of: 18% male and 81% female with the following ethnic dispersion; 20.5% African American, 0.4% American Indian, 2.3% Asian/Pacific Islander, 0.9% Hispanic, and 75.7% Caucasian.

Retrospective data were used for this study. Many data points were not archived for all individuals interviewed over the two year time frame, limiting the sample size ($n = 138$) used to evaluate development of professional characteristics. Other factors may have also skewed admission scores. For instance, GPA at time of application to the nursing program may have been comprised of only course work from the application university or possibly a combination of these courses and courses from other colleges with unknown academic rigor. This might lessen the equality of recorded GPAs as a measurement of academic achievement. Some students may have interviewed the previous year, yet were not selected for admission. A second interview experience could provide these students with a better understanding of the process, and possibly an advantage over students interviewing for the first time.

Another limitation of the study concerned the interview process. Interviews were conducted by nursing faculty and community representatives. A thirty minute preparation of the interviewers was provided prior to the interviews but perhaps clearer, more specific instructions could improve inter-rater reliability. A pre-interview discussion regarding the meaning of the scoring instrument and use of a Likert-type scale for scoring could increase consistency between raters. Lack of consistency was apparent in the preceptor scoring instrument. A more detailed discussion of the meanings of the scoring tool and levels of the Likert-type scale may have provided more consistent scoring among the preceptors.

While much has been written to explore student admission to nursing school based on academic achievement, little evidence supports interviews as a valid process for identifying non-academic factors. Patterns of knowing, other than empirical, are difficult

to measure. Interview questions may or may not elicit responses reflective of what the questions are intended to measure (Carper, 1978; Clements & Averill, 2004). Individual interviewer conclusions from impressions through face-to-face interactions using verbal and non-verbal communication were difficult to quantify. This study used descriptive tools to assist with providing measureable data for the interview questions.

Definition of Terms

The operational definitions of terms used in this study are as follows:

Academic attributes or characteristics include intellectual and verbal ability of an individual. These characteristics are typically measured through performance on written or oral examinations, projects, papers, or activities. A quantitative score is assigned to the performance either as a percentage of the items scored correctly or a letter grade of A, B, C, D, or F.

Application Grade Point Average (AppGPA) is the average calculated score of grades received from required courses prior to admission to higher level nursing program in the junior and senior years. Pre-requisite courses include English composition I and II, literature, fine arts elective, applied ethics, finite mathematics, biology, introduction to chemistry, history, government, sociology, general and developmental psychology, nutrition, anatomy and physiology, microbiology, statistics, professional writing for nurses, and introduction to professional nursing. GPA at this university is based on a four-point scale for each semester course; one point is equal to a D, two points are equal to a C, three points are equal to a B, and four points are equal to an A. Students must have a minimum unadjusted GPA of 2.5 at the time of application based solely upon pre-

nursing course work. A course must be repeated if a grade of C or lower is received and grades are counted in the calculated GPA each time a course is taken.

Baccalaureate in Science of Nursing (BSN) is a program of organized study in a college or university setting leading to a baccalaureate degree in nursing. Graduates from a BSN program possess skills to practice nursing as a generalist. A nurse with a baccalaureate degree is also able to assume a professional role with completion of courses in nursing science and theories, research, and leadership.

Communication is the ability of an individual to utilize verbal and non-verbal skills to provide information, thoughts, ideas, or influence a change in behavior of another person or persons. Communication must be truthful, respectful, and focused. Therapeutic communication is used in nursing to encourage expression of thoughts and feelings through listening, sharing, silence, touch, providing information, paraphrasing or summarizing, confrontation, and relevant questioning in a non-judgmental manner. Collaboration is included in communication, in which individuals use teamwork and group process to facilitate optimal outcomes. Communication and collaboration occur between other nurses, doctors, ancillary personnel, patients, and their families.

Critical thinking in nursing is the ability to process and apply competent reasoning in an efficient and logical approach for clinical decision-making. Openness to questioning and reflection are used during this reasoning process to ensure safe and sound clinical judgments.

Health Education Systems, Inc. (HESI) Exit Exam (E²) is a standardized on-line exam designed to assist faculty in evaluating the readiness of students to pass the licensure exam to become a practicing nurse upon graduation.

Grade Point Average (GPA) is the average calculation of grades earned from courses taken in an academic setting. GPA is used to gauge an individual's intellectual or verbal ability.

National Council Licensure Examination for Registered Nurses (NCLEX-RN) is an adaptive computerized examination given nationally to measure competencies of a registered nurse at the entry-level necessary to provide minimally safe and effective care in the practice setting. Licensure from State Boards of Nursing is based on successful completion of this exam.

Non-academic attributes or characteristics are personal and professional characteristics not measurable by intellectual or verbal ability. These characteristics include discipline specific professional values and expectations and personal attitudes, values, and motivation regarding the profession.

Nursing GPA (NsgGPA) is the average calculation score of grades earned during upper division nursing courses in the final five semesters of the nursing curriculum, junior and senior years.

Preceptorship is defined as the clinical practice of the student during the last semester of upper division nursing courses. The student works side-by-side with a licensed practicing registered nurse (preceptor) with a baccalaureate degree or higher and is gradually provided increasing responsibility, autonomy, and assumption of the professional role under supervision.

Professional behavior or role is the integration of empirical nursing knowledge, research, technology, communication, ethical principles, service, change, and leadership

into all activities when providing care, managing care, and as a member of the nursing profession.

Organization of the Study

This research study consists of five chapters. Chapter 1 introduces the study by identifying the problem, purpose, research questions, methodology, and significance of the study. Limitations of the study and definition of terms complete the chapter. Chapter 2 offers a review of literature focusing on current practices of assessing students for admission into nursing programs, followed by an explanation of desired characteristics and values for the development of professional nurses. A description of strategies used to measure academic and non-academic attributes is included along with essential components of the interview process. A description of use of interviews to strengthen retention rates through successful program completion in higher education and in nursing program admission is presented. Chapter 2 ends with implications for nurse educators and the nursing profession. Chapter 3 presents a detailed account of the study design, sampling procedure, instrumentation, data collection and methods used for data analysis. Chapter 4 describes the results of the study. Chapter 5 summarizes the study with conclusions, implications and recommendations for future research and nursing education.

Chapter 2: Literature Review

Introduction

This chapter will focus on a review of literature from past and present experts in the field of nursing education. The chapter will begin with a brief discussion of current practices of assessing students for admission into nursing programs. Next, desired characteristics and values for the development of professional nurses will be explained. There will be a description of strategies used to measure academic and non-academic attributes such as grade point average (GPA), standardized testing, and interview scores. The essential components of the interview process will be discussed, along with how this strategy has been used in an attempt to strengthen retention rates through successful program completion in higher education and in nursing program admission, specifically. The chapter will end with implications for nurse educators and the nursing profession.

Characteristics and Values of Professional Nursing

Similar to other professions, nursing is guided by values, codes, and standards. These principles have evolved over decades of expanding knowledge in the science of nursing. Defining distinct principles of practice and nursing education is necessary to prevent deterioration of the profession. The threat of nurses' work being given to those less qualified in order to offset the rising cost of healthcare demands the intellectual work of nurses as professionals to be recognized as significantly contributing to the well being

of society (Gresley, 2009) and preventing the devaluing of professional values (Rassin, 2008). The science of nursing has been well established; however, nursing education must focus on scholarship and development of characteristics of nurses that improve safe quality care (AACN, 2002; Gresley, 2009). It is recommended that the professional nurse begin practice with a Bachelor of Science in Nursing (BSN) (American Association of Colleges of Nursing [AACN], 2002, 2011). According to AACN (2008) the future of baccalaureate nurses begins with proper education to develop a generalist prepared for nursing practice and upon graduation should be prepared to:

- practice from a holistic, caring framework;
- practice from an evidence base;
- promote safe, quality patient care;
- use clinical/critical reasoning to address simple to complex situations;
- assume accountability for one's own and delegated nursing care;
- practice in a variety of healthcare settings;
- care for patients across the health-illness continuum;
- care for patients across the lifespan;
- care for diverse populations;
- engage in care of self in order to care for others; and
- engage in continuous professional development (p. 8).

Curriculum in baccalaureate nursing programs include learning outcomes in three domains of learning (cognitive, psychomotor, and affective) to encourage development of competent professional graduates. The American Nurses Association (ANA) provides *The Code of Ethics for Nurses* to guide professional values (ANA, 2005). Additionally, the International Council for Nursing (ICN, 2006) provides values of nursing practice similar to those of the ANA *Code of Ethics*. The American Association of Colleges of Nursing (AACN) defines *The Essentials of Baccalaureate Education for Professional*

Nursing Practice for inclusion of these values in BSN curricula. *Essential I* recommends a foundation of liberal education prior to beginning nursing courses (AACN, 2002, 2008). Nursing curricula build on the liberal arts foundation by providing a series of progressive theory and practicum experiences to encourage development of knowledge, skills, characteristics, and values consistent with those identified by the profession. Refer to Table 2.1 for a summary of the ANA *Code of Ethics*, the AACN *Essentials*, and the ICN *Code of Ethics*.

Nurses must have a reliable knowledge base for decision-making, clinical judgment, critical thinking, and lifelong learning. This knowledge is necessary for cognitive and psychomotor proficiency required to perform safe and efficient skills. However, nurses must internalize values to develop characteristics that are consistent with delivery of quality person-centered care (i.e., cultural sensitivity, caring, compassion, and respect for diversity) and to uphold professional expectations (i.e., continuous learning, spirit of inquiry, leadership, autonomy, and professional involvement) (AACN, 2008; Sullivan, 2009).

Knight and Page (2007) defined subjective attributes consistently found in service professions. These competencies include the ability to develop supportive relationships, possession of emotional intelligence, professional interactions with others, aptitude to listen and assimilate information, propensity for appropriate communication, recognition of boundaries within relationships, and control of self-management. Many of these competencies in the affective domain have different meanings depending on the context of the professional situation (Knight, & Page, 2007).

Personality traits are also components of the affective domain. Particular personality traits are thought to promote desired behaviors necessary for a professional career. Bradham, Dalme, and Thompson (1990) described specific qualities associated with the nursing profession that coincide with those outlined by Knight and Page (2007). Traits that promote adequate socialization into the culture of the nursing profession include characteristics such as ability to interact with others, confidence, advocacy, autonomy, accountability, and collaboration. As can be seen in Table 2.1, these are the same characteristics as those valued by the ANA, AACN, and the ICN for the profession of nursing. Students who possess these traits can internalize attitudes, commitment, knowledge, and skills which lead to high-quality nursing care (Bradham, Dalme, & Thompson, 1990). Evidence of this internalization of dominant professional knowledge, values, and beliefs is demonstrated through consistent behaviors and conviction for what is right or desirable (Rassin, 2008; Schultz, 2009).

A study by Leners, Roehrs, and Piccone (2006) found that nursing students began baccalaureate programs with preconceived notions of professional values and personal beliefs of the discipline. Values and beliefs are thought to motivate and to guide behaviors and decision-making. The values and existing characteristics of nursing students can provide a foundation for preparing them for practice. Interestingly, the researchers found that the values scoring highest at the beginning of nursing coursework continued to have highest scores toward the end of nursing coursework. These behaviors included the ability to maintain self-competence, accountability for practice, continuity in protection of confidentiality, provision of high-quality care, provision of care with respect for individuality and dignity, and advocating for legal and moral rights. The

researchers discussed that individuals attracted to nursing may inherently possess these professional values (Leners, Roehrs, & Piccone, 2006). Grainger and Bolan (2006) similarly found caring orientation to remain unchanged from the beginning to end of the nursing program.

Measurements for Success

Academic Attributes

Academic achievement is often based on knowledge that can be replicated based on facts, research, and measureable outcomes. Carper (1978a) describes four patterns of knowing specific to nursing; empirical, ethical, aesthetic, and personal knowing. Empirical knowing refers to the science of nursing and is often what is considered in a traditional meaning of education that can be measured with academic achievement. In nursing, empirical knowledge is needed to become a competent nurse and to provide the foundation for other ways of knowing to become a safe, holistic, and caring nurse (Clements & Averill, 2004). Students' empirical knowing can be correlated with academic performance measured by course grades and GPA.

Studies have found high attrition rates in nursing programs, which is described as either the separation from the curriculum without success or a delay in completing the program. The primary reported explanation for student attrition is admission of minimally qualified students to nursing programs who do not demonstrate adequate preparation to begin the rigorous curriculum. Other qualified students are not admitted who may be better suited for success, thus attrition contributes to waste of valuable limited resources

Table 2.1

Comparison of AACN, ANA, and ICN professional values

American Association of Colleges of Nursing (AACN) Essentials of Baccalaureate Education for Professional Nursing Practice		
American Nurses Association (ANA) Code of Ethics		
International Council for Nurses (ICN) Code of Ethics		
<u>AACN Essentials</u>	<u>ANA Code of Ethics</u>	<u>ICN Code of Ethics</u>
Essential I: Liberal Education for Baccalaureate Generalist Nursing Practice Essential II: Basic Organizational and Systems Leadership for Quality Care and Patient Safety Essential III: Scholarship for Evidence-Based Practice Essential IV: Information Management and Application of Patient Care Technology Essential V: Healthcare Policy, Finance, and Regulatory Environments Essential VI: Interprofessional Communication and Collaboration for Improving Patient Health Outcomes Essential VII: Clinical Prevention and Population Health Essential VIII: Professionalism and Professional Values Essential IX: Baccalaureate Generalist Nursing Practice	1. Practices with concern and respect for dignity, value, and individuality of all people. 2. Primary responsibility to patient (individual, family, group, or community) 3. Patient advocate to protect health, safety, and rights. 4. Accountability for own practice and appropriate delegation for optimal patient outcomes. 5. Self-care to maintain integrity and safety, competence, and continued personal and professional growth. 6. Establish, preserve, and advance healthcare environments and circumstances to allow for provision of quality care consistent with professional values. 7. Participates in improvement of profession through contributions 8. Collaborates with healthcare professionals and the public to meet health needs. 9. Articulates the values of nursing to maintain professional integrity and direct public policy for healthcare.	Nurses and People: <ul style="list-style-type: none"> • Responsible for people needing care • Promotes environment which supports: Human rights, values, customs, spiritual beliefs, and respect • Ensures individuals are adequately informed • Maintains confidentiality • Supports societal healthcare • Shares responsibility to protect environment Nurses and Practice: <ul style="list-style-type: none"> • Responsible and accountable for nursing practice and maintaining competence • Maintains personal health so care not compromised • Delegates responsibly • Maintains professional conduct to enhance public confidence • Ensures safe use of technology with respect to dignity, and rights of people Nurses and Profession: <ul style="list-style-type: none"> • Determines and implements standards of nursing practice, management, research, and education • Active in development of research-based knowledge • Active in professional organizations Nurses and Co-Workers: <ul style="list-style-type: none"> • Sustains collaborative relationships with co-workers • Advocates for individuals, families, and communities
Sources: American Association of Colleges of Nursing (2008); American Nurses Association (2005); International Council for Nurses (2006)		

(Grainger & Bolan, 2006; Newton et al., 2007a; Newton et al., 2007b; Van Bragt, Bakx, Bergen, & Croon, 2011).

Phillips, Spurling, and Armstrong (2002; as cited by Newton et al., 2007a) supported use of GPA as a significant predictor of success when separated into four important specific factors: overall college GPA, English GPA, biology GPA, and the number of times these courses were repeated. Newton et al. (2007b) supported this finding by stating that pre-nursing GPA influenced success, but addition of a scholastic aptitude test increased the prediction of first semester success in nursing school. A meta-analysis by Campbell and Dickson (1996) reviewed 47 studies conducted from 1981 to 1990 and found that grades in nursing and science courses were the strongest predictors for degree attainment.

Barkley, Rhodes, and Dufour (1998) discovered a statistically significant relationship between scores on standardized tests in the specialty areas of psychiatric, obstetrical, pediatric, and adult nursing and the students' ability to pass the NCLEX-RN. Beeson and Kissling (2001) found positive correlations between successful NCLEX-RN scores for students with higher GPAs including those who made fewer course grades of C. Students were more likely to fail the NCLEX-RN if they had received one grade of C or lower in a nursing or biology course by the end of the sophomore year (Beeson, & Kissling, 2001).

Some schools of nursing admit once a year and do not admit into the nursing program until all prerequisite courses have been completed, usually during the sophomore year. It is common for GPA and/or standardized testing to be utilized by nursing schools to determine selection for admission (Bradham, Dalme, & Thompson,

1990; Sadler, 2003; Van Bragt, et al., 2011). However, these academic measurements provide an understanding of the students' cognitive ability without insight into non-academic characteristics. Non-academic characteristics are qualities which may provide a better appreciation of student suitability to nursing school and the nursing profession (Bradham, Dalme, & Thompson, 1990; Sadler, 2003; Van Bragt, et al., 2011).

Non-Academic Attributes

In order to attain the ultimate goal of minimized attrition within nursing programs through predicting those students who will most likely succeed, it is necessary to ascertain information which offers an understanding of the attitudes and motivation students bring to the nursing program beyond academic scores. A few reports discussed the use of interviews or essays as a portion of admission criteria into disciplines other than nursing. Little research has been done on strategies for identifying which non-academic characteristics strengthen likelihood of success in higher education (Dante, Valoppi, Saiani, & Pales, 2001; Donaldson et al., 2010; Mountford, Ehlert, Machell, & Cockrell 2007).

Each professional discipline has a specific body of knowledge, values, and professional expectations. Carper (1978a) describes four patterns of knowing specific to nursing; empirical knowing (science of nursing), ethical knowing (moral values), aesthetic knowing (art of nursing), and personal knowing (self-awareness). The patterns describe knowledge needed for nursing practice, form a foundation for professional expectations, and offer insight into characteristics necessary for thinking. Nurse educators must be attentive to whether applicants understand what types of knowledge are valued by the nursing profession (Carper, 1978a, 1978b).

Ethical knowing concerns morals/principles of decision making based on right and wrong, good and evil, and is used in selecting from opposing nursing interventions for achieving optimal patient benefits. Personal values and beliefs that provide a basis for ethical knowing are developed through influences of faculty, culture, life experiences, and education. In nursing, ethical standards such as the ANA *Codes of Ethics* are used to guide decision making. Dilemmas may occur when personal values and beliefs conflict. In these situations, ethical principles may be used to help resolve conflict. These conflicts may be internal or external. Nurses are responsible for advocating for patients by using self-regulation and accountability for actions through the guidance of ethical standards (Carper, 1978a; Clements & Averill, 2004). Assessment of ethical knowing is difficult. One measurement may be questions regarding how a student would resolve an ethical dilemma.

Aesthetic knowing is characterized by the "art of nursing", or those factors such as intuition, empathy, awareness, and perceptions unique to the moment of the experience or encounter. Aesthetic knowing provides the nurse with perceptions and meaning of what to do and how to be in various situations to make rapid decisions. Empathy is important in aesthetic knowing, meaning the nurse is able to understand or learn alternate perceptions of the reality shared by the nurse and the patient during an encounter. Aesthetic knowing may be seen through the actions, attitudes, and interactions of the nurse in reaction to others that do not require serious thought (Carper, 1978a; Clements & Averill, 2004). Aesthetic knowing is also difficult to measure. Questions related to students' perceptions of nursing and how they might react in a given situation can provide insight about this pattern of knowing.

Personal knowing is self-awareness or a reflection of the nurse's state of being that is of equal importance as other humans with feelings. Personal knowing includes a desire and determination to succeed despite challenges. This type of knowing is attained through self-reflection about events, including self-reflection about responses from others. It is an ability to make an internalized meaning from an experience by being aware of what they know and what they do (Carper, 1978a; Clements & Averill, 2004). In nursing, personal knowing entails building a unique, genuine, trustworthy, interpersonal relationship between patient and nurse based on empathy, respect, and awareness of psychosocial, developmental, spiritual, and cognitive needs. This awareness is realized through self-reflection about one's personal values, relations to others, and nursing abilities.

Non-academic attributes are difficult to assess using conventional methods. A challenge for educators attempting to measure these attributes for admission purposes lies in evaluation of a context-dependent mix of temperament, understandings, traits and practices of potential candidates (Hughes, & Barrie, 2010; Knight & Page, 2007). Attributes that contribute to nurse competence include flexible skills, attitudes, and temperaments, similar to attributes highly valued in most professions, but when not measured, may leave an impression of not being valued (Knight, & Page, 2007). Assessment of non-academic attributes prior to and following graduation can provide universities with the ability to identify students with an aptitude for successful graduation and practice. The issues related to assessment stem from variation in description of attributes, what is included in the attribute, what to assess, and how to narrow the

assessment focus. However, authors in nursing agree that a valid measuring tool is needed (Knight, & Page, 2007).

Self-administered psychometric tests for emotional intelligence may prove helpful in identifying an overall emotional intelligence score. Emotional intelligence may offer insight into students' awareness of self and others, or management skills of self and relationships. The question is whether these self-reported behaviors correlate to judgments made by others. Reliability and validity of self-reported measures are difficult to achieve, making a prediction of future behaviors problematic (Knight, & Page, 2007).

In order to attain a deeper comprehension of personal attributes that may predict academic success in higher education, Van Bragt, Bakx, Bergen, and Croon (2011) studied student characteristics based on five personality traits found to influence personal learning strategies and study approach. These personality characteristics include extraversion, agreeableness, conscientiousness, emotional stability, and autonomy. These researchers believe that personality attributes guide tendencies toward patterns of behavior, comprehension, and emotion which then influence student behaviors and reactions to specific situations (Van Bragt et al., 2011). The Shultz Model of Affective Teaching-Learning in Nursing Education presents a relationship between attitudes, feelings, and emotions that ultimately affect behavioral outcomes such as safe, holistic, quality nursing care (Shultz, 2009).

Personality characteristics and prior educational experiences have been shown to influence learning activities and perceptions. One study found a significant change in academic and cognitive characteristics in students during the first year of scholarly studies of higher education. However, a change in personality characteristics did not

occur from beginning to end of the program (Bakx, Van der Sanden, Sijtsma, Croon, & Vermetten, 2006). Learners may more readily change their learning behavior than their personality characteristics, therefore an awareness of any relationship of how individual differences may predict academic achievement can possibly decrease attrition rates in higher education (Van Bragt et al., 2011).

Seago et al. (2008) specifically looked at relationships between attributes of nursing students and success in nursing programs in an attempt to develop a tool to measure these attributes. The researchers identified the following four concepts as predictors of academic achievement: 1) situational constructs, 2) institutional constructs, 3) dispositional constructs, and 4) career values. Situational constructs involved life circumstances of the student. Institutional constructs consisted of the characteristics of the academic institution in which the student would be pursuing an education. Dispositional constructs involved the student's ability to learn, along with motivation, affective status, and physical health. Career values related to distinct aspects that the student found important in the job they were pursuing. Findings from this research led to a conclusion that it is difficult to develop a valid tool for testing the four concepts. The findings supported utilizing dispositional constructs of math and science ability, career values related to job characteristics and style of work, situational constructs of work and financial issues, and institutional constructs of diversity and nursing faculty for predicting successful completion of nursing programs (Seago et al., 2008).

A reported 26.3 percent attrition rate in nursing schools within the United Kingdom prompted Donaldson et al. (2010) to research the use of an interview process in an attempt to identify student characteristics that best correlate to nursing. Students who

scored highest on an interview were accepted and followed throughout the program to evaluate outcomes. Findings from the research revealed that very high interview scores were predictive of success, with very low scores predictive of failure, and median scores did not add useful results (Donaldson et al., 2010).

College performance and attrition problems are not specific to nursing. Mountford et al. (2007) studied use of an interview process that included real-time problem-solving and writing activities in an endeavor to identify personal characteristics of candidates, which correlate with success in an educational leadership program. Prior to the study, student selection was primarily based on academic measurements consisting of graduate record examination (GRE) scores, GPAs, and letters of recommendation. The researchers questioned if measures were adequate to collect information related to skills and temperament needed to become a successful leader. A face-to-face interview between the applicant and the interviewer was used to help determine student suitability for the program. Results indicated a positive statistically significant correlation between personal characteristics of scholarship, professionalism, and overall presentations from the interview, in addition to GPA and GRE scores. The most predictive indicators of student success were undergraduate GPA, verbal GRE, and problem-solving recorded in the writing activity (Mountford et al., 2007).

Wilson (1999) studied use of essays as compared to interviews for identifying qualities in applicants to a nursing program. Results indicated no identifiable differences in attrition rates when one school of nursing changed from interviews to essays as a portion of the admission process into the program. Essays were seen as a way to elicit the same information, without using the time and resources required for interviews. The

essays in this study focused on the three criteria of personal characteristics, reasons for applying to a nursing program, and the perceived capability to meet the expectations and objectives of the nursing program. The essays were rated by three raters using a Likert scale and did not reflect predictive validity of success of those students chosen for admission (Sadler, 2003; Wilson, 1999).

Sadler (2003) also studied use of essays as a portion of the admission process to nursing school in conjunction with GPA. The questions asked in the essay were to: 1) describe work in a health area, 2) discuss their interest in nursing, and 3) define the role of a nurse. Analysis of qualitative data from this research suggests that the majority of students left the nursing program for personal reasons. Informal reports from students who dropped out of the program revealed the students were not willing to put in the effort necessary to be successful, were not inclined to sacrifice their GPA, or exhibited animosity toward nursing (Sadler, 2003).

Further analysis of qualitative data from Sadler's (2003) study revealed that those students who did not complete the program lacked personalization and internalization in their comments regarding the role of a nurse. Those students who completed the nursing program discussed assuming the role of the nurse as an internal process and used words such as "being" or "becoming" a nurse in the essay. Essays were therefore seen as a valuable addition to requiring GPA of 2.5 or greater, as a way to predict completion of the nursing program (Sadler, 2003).

Literature supports the importance of assessing non-academic attributes that assist with motivation, persistence for success, and are similar to those valued by professions. However, there is agreement that these attributes are difficult to measure using

conventional methods. Several suggestions have been made for ways to measure these attributes (i.e., psychometric tests, personality testing, essays, interviews, observations). Despite the difficulty in assessing these attributes, evaluation of these must be seriously considered. The choice of how to measure non-academic attributes should be made based on the design and practice of the professional program with consideration of context (Knight & Page, 2007).

Interview Process

Thoughtful selection of questions to guide student responses can generate responses that include motivational reasons for choosing the career of nursing. Identifying internalization of the nursing role versus external characterization of the nurse should be quantified in order to understand if a personal connection exists (Sadler, 2003). Students' unrealistic perception of nursing has been found to be a primary reason for attrition in nursing programs (Grainger & Bolan, 2006). One study found that students' caring orientation to nursing (the perception that a nurse cares for people) does not change from beginning to end of the nursing program. However, professional self-concept and life orientation do change throughout the educational process (Grainger & Bolan, 2006). It is crucial that students applying for admission to nursing programs be assessed for an understanding of and desire for the profession in order to improve success and prevent attrition (Grainger & Bolan, 2006).

An interview process can provide an initial profile of personality traits of student candidates prior to entering the nursing program. Bradham, Dalme, and Thompson (1990) identified personality traits that practicing nurses found desirable for nurses to possess. These traits included “low level[s] of abasement, aggression, [excessive]

autonomy, defence, exhibition, impulsivity, and succorance” (p. 228). Abasement is defined as a high degree of humility or self-effacement; it is understandable that nurses should possess low levels and should possess assertiveness. Aggression is defined as one who is easily annoyed or quick to react negatively; nurse should possess low levels in order to promote collaboration. Excessive autonomy is defined as rebellion; nurses need low levels for confidence in following policies, procedures, and obligations to the profession. Defence is when one takes offense to criticism; low levels are necessary for nurses to identify strengths and weaknesses and make changes to improve outcomes. Exhibition defines the enjoyment of being the center of attention; low levels are necessary in order to provide person-centered care. Impulsivity describes one’s quick reaction based on emotions; low levels are needed to encourage thoughtful consideration of the situation before action. Succorance defines the feeling of insecurity or helplessness without support from others; low levels are necessary for nurses to become autonomous and confident in themselves (Bradham, Dalme, & Thompson, 1990) on which trusting therapeutic relationships are built.

Bradham, Dalme, and Thompson (1990) reported practicing nurses desired “moderate levels of change, dominance, harm avoidance, play, and social recognition, and a high level of achievement, affiliation, cognitive structure, endurance, nurturance, order, sentience, and understanding complete the valued profile” (p. 228). Moderate levels of the following characteristics are necessary to allow for flexibility and adaptability (change), leadership skills (dominance), provision of personal safety (harm avoidance), easy-going attitude (play), and concern for approval and recognition (social recognition). Those characteristics found the most desirable describe personalities of

competent nurses with the ability to accomplish tasks and goals (achievement) while maintaining pleasant work relationships (affiliation) with competent decision-making (cognitive structure). Nurses must also be able to preserve (endurance) while providing care (nurturance) in an organized (order) manner using all senses (sentience) and understanding (Bradham, Dalme, & Thompson, 1990).

However, identifying personality traits such as integrity or altruism that correlate with those of the nursing profession is a challenge facing nursing faculty. Screening for traits which would make it difficult for students to acquire values, skills, characteristics, and knowledge necessary to socialize into the nursing profession must be considered during the admission process (Bradham, Dalme, & Thompson, 1990).

One other study conducted by Ehrenfeld and Tabak (2000) utilized interviews as part of the selection process for nursing students. Group interviews were preferred by both students and faculty in the study. Eighty-seven percent of students stated that groups provided an environment that decreased anxiety versus having an individual interview. Faculty responses revealed opinions that group interviews were advantageous in that there was more effective use of time, reduced anxiety in students, and provided an opportunity to assess communication skills, non-verbal communication, eye contact, critical reasoning, self-control, leadership, and eloquence (Ehrenfeld, & Tabak, 2000).

Although many resources are necessary to organize, administer, and evaluate interviews, the qualitative data obtained from an interview process can provide valuable information about factors that motivate students to select nursing school (Sadler, 2003; Wilson, 1999). Factors associated with achievement in nursing students through a semi-structured interview process were identified by Dante et al. (2001). This study revealed

that non-academic factors such as work hours, family commitments, and learning difficulties negatively influenced program completion. Age and gender were not significant variables related to success. Another finding of interest was that failure of at least one nursing exam did not have a significant negative impact on program success (Dante et al., 2001).

These results are supported by another study that assessed interactions during focus groups of nursing students with previous performance problems. Four themes emerged during group interactions: the desire or motivation to succeed, the acceptance of failure, the awareness of personal characteristics necessary for success, and the personal accountability for success and failure. The students' positive or negative interpretations of the themes were found to influence future academic success (Robshaw & Smith, 2004). In another study faculty interviewed nursing students to identify significant factors such as perseverance when experiencing an overwhelming feeling of defeat. The themes which emerged from this study were the ability to acknowledge positive attitudes and self-talk and the availability of resources and support systems (Williams, 2010).

Non-academic attributes continue to be influenced by life experiences. Nursing program candidates may find it difficult to reveal their non-academic competencies during a short interview process. Many disciplines of higher education find it easier to exclude interviews from the admission assessment rather than face the challenges they present (Hughes, & Barrie, 2010; Knight, & Page, 2007). However, with development of clear criteria specific to the attributes to be assessed, appropriate training, and honest application of the assessment tool, the complexities and vagueness of the process can be minimized (Knight & Page, 2007).

Implications for Nursing Education

Non-academic attributes have been identified as being able to be assessed or measured. However, it is necessary to consider that the principles involved in human behavior vary depending on context (Knight & Page, 2007). Professional organizations such as the ANA, AACN, and ICN have provided nursing with an understanding of attributes and behaviors that are valued by the nursing profession and therefore should be assessed. The next step is for faculty to take on the challenge to define clear assessment criteria, properly train those who will participate in interviewing, and accurately evaluate and document findings from the interviews.

Using interviews as a portion of the selection method for candidate admission to nursing education provides benefits to universities through predicting potential retention thereby, more effectively using resources. Developing tools to help assess candidates most likely to develop professional nursing values, skills, and characteristics can be helpful for learners to complete the program. These students become practicing nurses who understand and value ideas and behaviors expected by the profession. Holistic quality nursing care is practiced by those who internalize professional values based on prior beliefs, attitudes, and feelings (Schultz, 2009).

Summary

Shortages of nurse educators have affected the number of openings for students requesting admission into nursing programs (Grainger & Bolan, 2006). This has increased the competitiveness of the admission process. Attrition of those admitted into nursing programs also compounds the predicted shortage of qualified nurses to care for

the aging population in the near future. It is necessary for schools of nursing to identify students with the highest probability of success in order to prevent attrition, thereby graduating nurses to meet society's needs. Students with the top academic measures from GPA and standardized testing have been routinely chosen for admission. However, students who are the greatest academic achievers are not always best suited for a career in nursing.

Professional nursing organizations such as the ANA, AACN, and IBN offer guidelines for values and behaviors valued by the profession to provide safe, quality, nursing care. Studies have found that those who inherently possess these attributes are more likely to be successful. Sadler's (2003) study revealed that those students who did not complete nursing programs, lacked personalization and internalization in their comments regarding the role of a nurse. The challenge nurse educators face is how best to evaluate non-academic attributes. It is not enough to increase numbers of graduates without attention to students capable of achieving success on the national licensure exam for practice and competence in providing safe, holistic nursing care (Grainger & Bolan, 2006; Newton, Smith, & Moore, 2007; Sadler, 2003). Despite the difficulty in assessing these attributes, evaluation of these must be seriously considered. An interview process can provide an initial profile of personality traits of student candidates prior to entering the nursing program. Using interviews as a portion of the selection method for candidate admission to nursing education provides benefits to universities through predicting potential retention thereby, more effectively using resources and to the nursing profession by adding quality graduates prepared to effectively provide quality nursing care.

The purposes of this study are to 1) to evaluate data from student interviews to discover significance, if any, of the interview process in identifying characteristics other than academic achievement, and 2) to evaluate correlation of pre-admission interview scores to retention and graduation of BSN students in one University setting. Subjects in the research were applicants interviewed and accepted to the baccalaureate nursing program at a public University in Alabama.

Chapter 3 will discuss the methods in the study design to allow for the possibility of replication. A description of the sampling procedure is included to provide an understanding of the subjects in the study. Each instrument will be defined to offer information about data collected. The data collection process and methods used for data analysis will be explained. Each section will be described in detail to allow for replication of the study.

Chapter 3: Methods

Introduction

The purposes of this study are to 1) evaluate data from student interviews to discover significance, if any, of the interview process in identifying characteristics other than academic achievement, and 2) evaluate correlation of pre-admission interview scores to retention and graduation of BSN students in one University setting. Subjects in the research were applicants interviewed and accepted to the baccalaureate nursing program at a public University in Alabama.

Research Questions

The research questions to be answered with this study include:

1. Do average interview scores (AIS), in addition to application grade point average (ApplGPA), assist in predicting retention and success in upper division nursing school as evidenced by the academic measurements or empirical knowing with Health Education Systems, Inc. (HESI) Exit Exam (E^2) score(s) and GPA from nursing (NsgGPA) courses at graduation?
2. Do average interview scores (AIS) assist in predicting the development of professional characteristics which lead to the satisfactory performance in clinical courses measured by average preceptor evaluations (APS) and those

specific for critical thinking (CT), communication (Comm), and professional behavior (PR)?

Chapter Overview

Chapter 3 presents a detailed account of the study design for the possibility of replication. A description of the sampling procedure is included to provide an understanding of the subjects in the study. Each instrument will be defined to offer information regarding the process of data collection. Methods used for data analysis will be explained. Each section will be described in detail to provide information for duplication of the study.

Research Design

The research was designed as a retrospective longitudinal study. Semi-structured interviews were administered for fall applicants to the upper division baccalaureate nursing courses, specifically, the junior and senior year curriculum. Students must have completed or be in the process of completing all pre-requisite courses. Data were collected on applicants for 2008 and 2009 fall admission at one small Southeastern University school of nursing. Interview scores, application GPAs, and percentage of courses taken at this university were calculated to rank students for admittance into upper division nursing courses. Those students who were admitted and continued in the program were evaluated for academic progress by using data from standardized tests (Health Education Services, Inc. [HESI]) and GPAs throughout the five semester program. Non-academic performance was evaluated by the use of preceptor evaluations

of attributes in the areas of critical thinking, communication, and assumption of professional role during the final clinical experience of the program.

The strength of this design was in the collection of longitudinal data in order to identify the success patterns of students over time rather than information based on one data point. Longitudinal data offered insight into changes over time versus a single point of information. Evaluation of the dependent variables individually allowed for a clear understanding of how each variable factored into the prediction. Weaknesses of this design included the time necessary to collect longitudinal data, potential attrition or lost participants, correlation of data from point to point, lost or not recorded data, and unknown variables affecting data points. A retrospective blinded study allowed evaluation of student data without researcher bias.

Sampling

The sample for this study was obtained from the pool of applicants that entered the university declaring a nursing major during their freshman or sophomore year. Some diversity in gender and ethnicity existed in the characteristics of population and the percentage was maintained with the sample (see Table 3.1). A majority of the students were traditional, defined as those students who attend college directly after completing high school and others were non-traditional, defined as greater than 24 years of age, holding a previous degree, or seeking a second career (see Table 3.1). Reasons for delay in nursing education related to the need to work for a period of time, responsibilities of child rearing, health, marriage planning, financial reasons, or ethnic or cultural issues.

Students who applied for admission to the school of nursing for fall entrance in 2008 and 2009 and met minimum requirements of a 2.5 GPA based on a 4.0 scale and a

C grade or higher in all prerequisite courses were potential subjects for this research study (n=315). However, the final sample consisted of those students accepted into the upper division nursing program based on the combined scores of the lower division GPA, interview scores, and percentage of courses taken at this university and who began studies in fall 2008 and 2009 (n=214).

A pilot interview was conducted in summer of 2007 for students applying for fall admission, and was used to evaluate the interview procedure. Students were not mandated to interview in order to be admitted in fall 2007 and therefore not all students admitted to the program participated in the interview. Data from this cohort was not used in this study. However, this data was utilized to evaluate the interview process. An evaluation of the pilot study revealed the need for minor changes to the interview process.

The questions were slightly altered following the pilot study to elicit the same information but using different wording. For instance, question one was reworded from “If you needed nursing care, what qualities would you want your nurse to have?” to “What do you envision when you think of the job of the nurse?” The new wording offered a clearer understanding to encourage more specific answers. Question two remained the same; “Where do you see yourself in 5-10 years?” Question three, “What would you like us to know about you that is not reflected in your transcript or academic record?”, was eliminated due to the similarity to question five. Question four remained the same but moved to number three; “Describe a community or group volunteer activity with which you have been involved and what it has taught you about leadership.” A new question four was written to assess work ethic; “You may have heard that nursing school

is a lot of work. How do you plan to organize your time to balance your responsibilities?” Question five was slightly altered for clarity; “All of the candidates for this program are highly qualified, and there are more than we are able to accept. What would you like us to know about you that would make you a good nurse?” Rationale for revisions was to increase clarity for the interviewee, thereby encouraging more concise answers and preventing unfair advantage of students interviewing a second time.

The pilot process made apparent the need for a minimum of four students to be interviewed simultaneously to provide a greater ratio of interviewees to interviewers. A minimum of three interviewers to individually rate candidates was suggested to increase validity and reliability of scoring and allowed the ability to drop a score should it not prove consistent with the other raters due to higher or lower scores as compared to the other two raters.

The second and third cohorts interviewed during summer 2008 and 2009 for admittance in the fall of the same year, were mandated to interview as a portion of the admission procedure. There were 144 students interviewed for the 2008 cohort and 154 students interviewed for the 2009 cohort. There were 106 students admitted into the 2008 cohort with 87 students accepting admission, and 127 students were admitted into the 2009 cohort with 115 students accepting admission. Only those accepting admission were included in the study (n=214). Progress over the five semester nursing program for each cohort was evaluated using data from E² exams, final nursing GPA scores, and preceptor scores. Differences in reported sample sizes per variable were related to missing data.

There were a total of 315 qualified applicants for upper division nursing courses for fall 2008 and fall 2009. A total of 298 of these were interviewed. The seventeen who were not interviewed had been admitted prior to the beginning of the mandated interviews and were in the program part-time or had been previously unsuccessful and were behind in the sequence of study. A total of 152 students graduated from the program; 77 graduates in 2010 and 75 graduates in 2011. Attrition was related to several factors; course failure without return, withdrawal, declined admission, admitted to another school of nursing, or the student was not selected for admission due to interview failure (AIS \leq 3.125) or drop in GPA below 2.5 upon final completion of pre-requisite courses.

The exhaustive sampling procedure for this research study was necessitated by the admission requirements for entrance into nursing school and students who desired entrance to the nursing program. The point of this research was to evaluate the predictive ability of interview scores combined with GPA to improve proficiency for selecting students from the population of potential applicants with qualities most likely to succeed in nursing school.

Instrumentation/Data Collection

Following approval of the Institutional Review Board (IRB) at Auburn and Auburn Montgomery Universities, data from an existing database were used for this study. As a component of the job description of the nursing faculty member responsible for all pre-nursing admission advising, data were collected and maintained for students with a declared major in nursing. Data were linked by the nursing faculty advisor using

an unidentifiable number before being given to the researcher, thus rendering the data anonymous to the researcher.

The database provided the researcher with; demographic data of gender, ethnicity, year of graduation, age, and disposition of each student; GPA scores for application, admission, and nursing; average interviews scores; and HESI scores for maternal, pediatrics, medical-surgical, psychiatric, and E². All data was included in this study except for the HESI exams. Only the E² scores were analyzed in this study. Preceptor scores were obtained from clinical files and linked to the database.

Table 3.1

Comparison of Characteristics of Undergraduate Student Population at Study University

Characteristics	Overall 2008 UG	Declare Nursing Major 2008	Overall 2009 UG	Declare Nursing Major 2009	Current Study Pop.	Current Study Sample
Gender						
Male	307 (7%)	33 (6.4%)	363 (7.3%)	48 (8.1%)	44 (14%)	40 (18%)
Female	734 (15%)	248 (48%)	772 (15%)	310 (52%)	271 (86%)	174 (81%)
Unknown	3649 (77.8%)	228 (44%)	3863 (77.4%)	238 (40%)	0	0
Ethnicity						
Black	1378 (29%)	175 (34%)	1482 (29.7%)	210 (35%)	67 (21.3%)	44 (20.5%)
Am. Indian	19 (.4%)	2 (.3%)	23 (.4%)	0	0	1 (.4%)
Asian/PI	80 (1.7%)	10 (1.9%)	73 (1.4%)	10 (1.6%)	14 (4%)	5 (2.3%)
Hispanic	53 (1.1%)	7 (1.3%)	56 (1.1%)	9 (1.5%)	4 (1.2%)	2 (.9%)
White	2700 (57.6%)	298 (58.5%)	2760 (55.2%)	350 (58.7%)	230 (73%)	162 (76%)
Non-Resident	93 (2%)	4 (.8%)	138 (2.8%)	4 (.7%)	0	0
Alien	137 (3%)	13 (2.6%)	154 (3.1%)	13 (2.2%)	0	0
Other/Unknown						
Non-Traditional	1278		1367		87	89
Traditional	3412		3631		228	125
Total	4690	509	4998	596	315	214

Grade Point Average (GPA)

Grade Point Average (GPA) is the average calculation of grades earned from courses taken in an academic setting. GPA is used to gauge an individual's intellectual or

verbal ability. GPA can range from one to four each correlating with a letter grade; one correlates with a D; two correlates with a C; three correlates with a B; and four correlates with an A. It is possible to have fractionated scores in between each whole number. A higher the GPA correlates to a higher academic achievement of the student.

HESI Exit Exam (E²)

HESI Exit Exam (E²) is a 150-item comprehensive standardized exam for baccalaureate nursing used by nursing schools to predict the preparedness of students for passing the National Council Licensure Examination for Registered Nurses (NCLEX-RN) upon graduation. Four versions are available. This exam includes questions to evaluate curricular outcomes and students' knowledge comprehension and aptitude to apply nursing concepts (Morrison, Adamson, Nibert, & Hisa, 2004). The classical test theory by Crocker and Algina (1986) is the framework used to develop HESI exams. This theory supports the measurement of psychological characteristics when quantitative values are given to behaviors during test taking. Relationships between psychological products and practical outcomes can be predicted (Morrison, Adamson, Nibert, & Hisa, 2004).

Interview Scores

The existing database provided the researcher with data obtained from group interviews with applicants to upper division nursing school during fall 2008 and 2009. Each interview session was composed of three interviewers, two faculty members from the school of nursing and one community professional. The individual from the

community was a professional with an interest in healthcare, the school of nursing, and its graduates.

Faculty and community interviewers were briefed by the faculty advisor as a group about the interview process, scoring instruments, and scoring procedure prior to relocating to the designated private interview areas. Additionally, each interviewer was provided with a list of five questions (see Appendix B) and an interview scoring Instrument (see Appendix C) to be utilized during the interview process. One faculty member was assigned to the role of group leader and was provided with instructions and a script (see Appendix A) to read to the applicants at the beginning of the interview and at the completion of the interview.

Students were randomly assigned to an interviewer group, applicant group, and interview location by the academic nursing advisor prior to the interview date. All students were asked to wear professional attire, arrive a half hour before interview time, and to meet in a central location of the same building where the interviews were to occur. Applicants were greeted by current senior nursing students, given a name tag, provided a brief orientation of the interview process, and encouraged to ask questions of the senior students to lessen anxiety. Breakfast snacks and juice were provided to promote alertness and to welcome the students. Each group of applicants was escorted to the interview room by a senior student where they were met by the interviewers.

Interviewers were strategically seated around a large square table which would accommodate eight people comfortably. The applicants were instructed to take any open seat between the interviewers. The faculty leader began with reading an opening script to establish rapport and provide information to the applicants about the expectations (see

Appendix A). Each person provided a brief introduction until all at the table had finished. Questions were asked by all interviewers in an alternating format with the same questions asked by the same interviewer during each group. All applicants were to provide answers to each question in any order desired. The interviews each lasted approximately 45 minutes. The leader then thanked the students and explained the notification process according to a script. As the applicants left, each placed their name tag on the back of the seat to provide a visual cue during the scoring process.

Each interviewer individually scored the students immediately following the interview based on five questions (see Appendix B). The five questions included; 1) "What do you envision when you think of the job of the nurse?", 2) "Where do you see yourself in 5-10 years?", 3) "Describe a community or group volunteer activity with which you have been involved and what it has taught you about leadership.", 4) "You may have heard that nursing school is a lot of work. How do you plan to organize your time to balance your responsibilities?", and 5) "All of the candidates for this program are highly qualified, and there are more than we are able to accept. What would you like us to know about you that would make you a good nurse?"

Each question corresponded to a 20-item scoring tool on a scale of 1 (strongly disagree) to 5 (strongly agree) (see Appendix C). Items 1-7 were related to verbal communication, items 8-10 dealt with effectiveness of nonverbal communication, items 11-12 pertained to presentation of general information, items 13-14 correlated to presentation of nursing information, items 15-16 described personal goals related to nursing, items 17-18 concerned qualities related to leadership and service, and items 19-20 referenced unique attributes.

One example of the scoring process, items 8) Dressed appropriately, 9) Poised during interview, and 10) Appropriate affect during interview; without excessive anxiety or negative cues were answered based on non-verbal characteristics during the interview. A student who was dressed with business type clothing which fit well and was pressed would receive a score of 5 on item 8 but coming in wrinkled clothing, blue jeans, or revealing apparel a score of 1 be recorded. Another example, answers based on question 1) “You may have heard that nursing school is a lot of work. How do you plan to organize your time to balance your responsibilities?” allow for assessment of unique attributes in items 19) Articulated personal unique attributes other than caring, and 20) Described how unique attributes will contribute to the nursing profession. An answer which included decision-making, knowledge, skills, and responsibilities would elicit a score of 5 but an answer of caring or not sure would elicit a score of 1. Scores from the three interviewers for each item were averaged and then the total scores were then averaged for a final comprehensive interview score.

Interview scores (25%) were calculated along with pre-nursing GPA (65%) and percentage of lower division courses taken at AUM (10%) to rank students for admission to the upper division nursing program. Utilizing a Likert-type scale to score the interviews provided quantifiable data for the study, thus allowing data to be evaluated in timely manner to prevent delay in admission notification to applicants. Timely notification was essential to allow students an opportunity to register for the nursing program or to change programs if needed.

The interview questions and tool used for scoring were adapted with permission from the University of North Florida School of Nursing. The validity of the Interview

Scoring Instrument (ISI) has not been formally measured. However, the ISI does provide an indirect measurement of student characteristics that represent the constructs to be studied through answers for each item or indicator within the tool.

A scoring tool with distinct indicators provided each interviewer with specific measures to use for evaluating the specific concept or student characteristics that may be congruent with success in nursing school, with as much accuracy and truthfulness as is possible when using indirect measures to evaluate subjective constructs. Using a Likert-type scale provided quantitative data for these indirect measures. Content validity or the representation of the question to areas intended to measure was discussed among faculty with changes made following the pilot study (Creswell, 2005). Evidence of from the current study will be used to further determine validity of the ISI.

The predictive ability of the ISI tool will be measured by correlation of the dependent variables to independent variables (Ross & Shannon, 2008). Inter-rater reliability of the tool was demonstrated by comparing the scores of each of the three interviewers for each applicant. Consistent results on the ISI for each candidate by each interviewer would demonstrate higher inter-rater reliability. An Intraclass Correlation Coefficient between the ratings of the three interviewers was calculated to evaluate the consistency among the raters (Ross & Shannon, 2008).

Preceptor Scores

Preceptor scores were scores given to students upon evaluation of clinical performance while working in the final semester of the nursing program with a registered nurse in a clinical setting. Students begin taking on the role of the nurse through immersion of clinical experience while under constant supervision of a licensed

registered nurse or preceptor. Students are evaluated by the preceptor based on an evaluation tool developed collaboratively by the faculty involved with the Curriculum Oversight Committee of the school of nursing and course faculty. Students are graded on a Likert-type scale of 1 (not effective) to 5 (extremely effective) based on eight items of clinical performance (see Appendix D).

Data Analysis

Data for this study was analyzed using Statistical Packages for the Social Sciences (SPSS) Version 16.0 for Windows. An Intraclass Correlation Coefficient (ICC) analysis was conducted on the interview scores of each candidate to evaluate inter-rater reliability or consistency among the three raters. Demographic data from the samples were evaluated using SPSS for frequency analysis.

A hierarchal multiple regression analysis was used to transform the data and provided statistics for analysis to determine which independent variable (ApplGPA, AIS) best predicted success in the nursing program related to the dependent variables (E^2 , NsgGPA). Every dependent variable was analyzed with each and both independent variables in order to identify the best predictors of success. Average scores from the 20-item scoring tool used during the interviews were statistically analyzed using the same multiple regression model to predict the variable that was most predictive of scores on clinical evaluations that correspond to the qualities being measured to identify consistency of non-academic traits. Application GPA (ApplGPA) and average interview scores (AIS) (independent variables) were analyzed as prediction of average preceptor scores (APS) (dependent variable). Another regression was conducted once the eight items which comprise the AIS were scaled into three items: critical thinking (CT),

communication (Comm), and professional role (PR), in order to identify which professional attributes were most predictive of success throughout the program.

Summary

This chapter focused on the retrospective longitudinal study design conducted using data collected from semi-structured interviews of applicants for the 2008 and 2009 cohorts to upper division nursing school at one public University in Alabama. The population and sampling procedures were described. Each instrument included in the study and data collection procedures were thoroughly explained. The main focus of the study, the interview process, was described in detail with Intraclass Correlation Coefficient (ICC) to evaluate inter-reliability. The use of hierarchical multiple regressions were discussed as the method of analysis for data from GPAs, E^2 , AIS, and preceptor scores to answer the research questions. Chapter IV will focus on the results of the data analysis in detail.

Chapter 4: Results

Introduction

The purposes of this study are to 1) evaluate data from student interviews to discover the significance, if any, of the interview process for identifying characteristics other than academic achievement, and 2) evaluate correlation of pre-admission interview scores to retention and graduation of BSN students in one University setting. Subjects in the research were applicants interviewed and accepted to the baccalaureate nursing program at a public university in Alabama.

This chapter will provide a descriptive account of the results from the data analysis for this study. It will begin with statements of the purposes of the study and research questions to be answered. An explanation of each step used in data analysis will be provided. The study design will be depicted for clarity of the study process. Descriptive statistics are explained to identify the population and sample used in the research. Next analysis of reliability and validity will be specified for the instruments used in the study. Finally, the results will examine the relationship between the independent variables (application GPA and average interview scores,) and the dependent variables (nursing GPA and HESI Exit Exam [E²], average preceptor scores and formed scales of communication, critical thinking, and professional role).

Research Questions

The research questions to be answered in this study include:

1. Do average interview scores (AIS), in addition to application grade point average (ApplGPA), assist in predicting retention and success in upper division nursing school as evidenced by the academic measurements (empirical knowing) with Health Education Systems, Inc. (HESI) Exit Exam (E^2) score(s) and GPA from nursing (NsgGPA) courses at graduation?
2. Do interview scores (AIS) assist in predicting the development of professional characteristics which lead to the satisfactory performance in clinical courses as measured by preceptor evaluations (APS) specific for critical thinking (CT), communication (Comm), and professional behavior (PR)?

The data collected was analyzed in the following manner:

1. Descriptive statistical analysis of demographic variables was conducted to identify the diversity of the population as compared to the sample for the University.
2. Inter-rater reliability of the three scores for each interviewee was analyzed using Intraclass Correlation Coefficient.
3. The eight items of the preceptor scoring tool were scaled to form three dependent variables: critical thinking (CT), communication (Comm), and professional role (PR). Reliability analysis was conducted for each scale.
4. The three scaled dependent variables were analyzed individually using a multiple regression analyses to determine effectiveness of rating non-

academic attributes in relation to ApplGPA and AIS for predicting success of nursing students.

5. A hierarchical multiple regression was conducted on both ApplGPA and AIS scores to determine if a statistically significant contribution existed in the predictability of success in upper division nursing courses for the dependent variables of final NsgGPA and Exit HESI scores. Statistical significance was set at $p < 0.05$ prior to the analysis.
6. Data for the second question were analyzed using a hierarchical multiple regression for ApplGPA and AIS scores to determine if non-academic attributes captured by the dependent variables of APS, CT, Comm, and PR influenced predictability of student success.

The final sample consisted of 214 subjects. The researcher was provided data via Microsoft® Excel spreadsheets. The data set was then imported into Statistical Package for the Social Sciences (SPSS) Version 16 for analysis. For this study, descriptive statistics were used to analyze the demographic data. Hierarchical multiple regression analyses were used to analyze the predictability above and beyond chance ($p < .05$) of each independent variable (ApplGPA and AIS) in relation to the dependent variables (NsgGPA, Exit HESI, APS, CT, Comm, and PR). Although, only cases with complete data were analyzed for each set of variables, therefore sample sizes varied from variable to variable due to missing data. The average sample size for each variable analyzed.

Study Design

This was a longitudinal study of nursing student cohorts interviewed for admission in fall 2008 and fall 2009. The study focused on identification of predictors of

student retention and success throughout the nursing curriculum. The study was prompted by the need to identify validity of an interview process for predicting student success following three years of use. Descriptive analyses identified the frequency distribution of demographic variables to provide general information about the population in the final sample. Multiple regression analyses were used to determine distinctive relationships between each independent variable and the dependent variable to elicit the impact of each variable (Ross & Shannon, 2008). The GPA at application (ApplGPA) and average interview scores (AIS) served as independent variables, while the dependent variables were 1) final nursing GPA (NsgGPA), 2) Exit HESI score, 3) average preceptor scores (APS), and 4) scaled items from the eight preceptor measurements to form three variables. These three dependent variables consisted of: item 2 and 6 shared constructs related to CT, item 3 and 7 mutually represented Comm, and items 1, 4, 5, and 8 collectively formed PR. Internal consistency of the scaled items was analyzed using Cronbach's alpha: CT ($\alpha = .789$), Comm ($\alpha = .719$), and PR ($\alpha = .829$). A level of .70 or greater provides measurement of reliability (Creswell, 2005).

Descriptive Statistics

The age range of students who applied for admission to upper division nursing courses at the study university during fall 2008 and 2009 ranged from 18 to 54 years old with a mean 23.83 years, mode of 20 years, and a standard deviation of 6.39. The ethnicity of this group included 230 Caucasians (73%), 67 African-Americans (21.3%), four Hispanics (1.3%), 12 Asians (3.8%), and two of unknown ethnic origin (.6%). Females comprised 271 (94.6%) of the student population with 44 (5.4%) males. Data for each student were further analyzed to assess for attrition rationale: 126 (40%) students

completed the upper division curriculum from beginning to end in the scheduled five semester rotation, 27 (8.6%) students failed one course and did not return, seven (2.2%) students withdrew from the program before completion, 31 (10.2%) students were out of sequence either due to part-time status or course failure, 19 (6%) students were accepted to the program but declined admission, 30 (9.5%) students were accepted to another competing university and chose admission at that university, and 74 (23.5%) students were not accepted either due to interview failure (AIS < 3.125) or drop in GPA (< 2.5) after all pre-requisite courses were completed. A total of 77 students graduated in 2010 (interviewed fall 2008) and 75 graduated in 2011 (interviewed fall 2009). Of the 152 graduates, preceptor evaluation scores were available for 138 students which comprised the final sample.

Instrumentation

Prior to analyzing data, reliability was determined for the Interview Scoring Instrument (Appendix C) for internal consistency in measuring scores assigned by the raters during the interviews. The data was analyzed using the Intraclass Correlation Coefficient (ICC) to assess inter-rater reliability. Wuensch (2007) states when more than one rating is assigned to an individual for observed behavior, “it is desirable to measure the extent to which two or more raters agree when rating the same set of things” (para. 1). Howell (2002) states, intraclass correlations are “either measures of reliability or measures of the magnitude of an effect” (para. 2). Results from the ICC of the individual scores from the three raters indicated acceptable internal consistency ($\alpha = .712$). Most social sciences consider a Cronbach’s alpha of .70 or higher as acceptable for reliability or consistency (Creswell, 2005). Supportive results included: single measure ICC = .454,

95% C.I.: lower .310, upper = .592, $F = 3.469$, $df = (69, 138)$, $p < .001$. Evaluation of reliability for interview ratings was vital to the validity of the research findings. Internal consistency provided the foundation for other statistical analyses.

Reliability analysis for internal consistency of the eight items of the preceptor scoring tool was conducted. High internal consistency was found for the eight items ($\alpha = .916$). The items were scaled into three groups of items that evaluated similar concepts, thus forming measures for critical thinking (CT) (items 2 and 6), communication (Comm) (items 3 and 7), and professional role (PR) variables (items 1, 4, 5, and 8). Reliability analysis for each of these new dependent variables was acceptable; CT ($n = 2$, $\alpha = .789$), Comm ($n = 2$, $\alpha = .719$), and PR ($n = 4$, $\alpha = .829$). Evaluation of the scoring tool reliability was essential because the tool was used to reflect the measurement of non-academic attributes of the nursing profession.

Table 4.1

Reliability statistics for Preceptor Scoring Tool and Scales

	N	# of items	Mean	SD	Reliability
Critical thinking	138	2	4.58	.51	.789
Communication	138	2	4.50	.56	.719
Professional Role	138	4	4.66	.45	.829
Ave. Preceptor Score	138	8	4.58	.45	.916

Data Analysis

Question One

Do average interview scores (AIS), in addition to application grade point average (ApplGPA), assist in predicting retention and success in upper division nursing school as evidenced by the academic measurements (empirical knowing) with Health Education

Systems, Inc. (HESI) Exit Exam (E^2) score(s) and GPA from nursing (NsgGPA) courses at graduation?

A hierarchical multiple regression was conducted to assess question one. NsgGPA was used as the dependent variable and AIS as the independent variable, while controlling for ApplGPA. GPA at application to upper division nursing courses contributed 32.9% ($\beta = .329, p < .001$) after controlling for AIS and was found to account for 10.2% ($R^2 = .102, p < .001$) of the variance in the final NsgGPA. However, scores from interviews also significantly contributed 18.6% ($\beta = .186, p = < .001$) in predicting the final NsgGPA and 9.7% of the variance was uniquely associated with AIS after controlling for ApplGPA. These findings suggest that when ApplGPA and AIS are combined, the predictability of successful program completion is 19.9% with a total contribution of 51.5% toward successful NsgGPA. Results were statistically significant ($F_{change} (1, 134) = 16.187, p < .001$), indicating that average interview scores can predict the final nursing GPA above and beyond the application GPA.

The same hierarchical multiple regression method to assess if AIS assist in predicting successful completion of the program, while controlling for the effects of ApplGPA, was conducted to evaluate the influence on comprehensive standardized tests (E^2) at the end of the program as the dependent variable. ApplGPA contributed 18.9% ($\beta = .189, p < .05$) after controlling for AIS but did not significantly account for variance in E^2 scores ($R^2 = .022, p > .05$). Interview scores were not found to be significant in contributing to E^2 predictions and only contributed 15.9% ($\beta = .159, p > .05$) when controlling for ApplGPA. AIS contributed a higher variance of E^2 scores (2.4%) but was not found to be significant ($R^2 = .024, p > .05$). While there was not statistical

significance associated with ApplGPA ($F = 3.060, p = .082$) or AIS ($F = 3.366, p = .069$), as sole predictors, the overall multiple correlation including both ApplGPA and AIS in predicting E^2 scores was statistically significant ($F = 3.239, p = .042$).

Table 4.2

Hierarchical Multiple Regression for Question One

QUESTION 1					
IV	DV ₁ Nursing GPA		DV ₂ HESI Exit Exam (E^2)		N
	β	R^2 change	β	R^2 change	
ApplGPA	.329***	.102***	.189*	.022	137
AIS	.186***	.097***	.159	.024	137

ApplGPA (Application GPA), AIS (Average Interview Score)
 Significant: *** $p < .001$, ** $p < .01$, * $p < .05$

Question Two

Do interview scores (AIS) assist in predicting the development of professional characteristics which lead to the satisfactory performance in clinical courses as measured by preceptor evaluations (APS) specific for critical thinking (CT), communication (Comm), and professional behavior (PR)?

Question two was analyzed using multiple regression analyses. The first portion of the question, "Do interview scores (AIS) assist in predicting the development of professional characteristics which lead to the satisfactory performance in clinical courses as measured by preceptor evaluations (APS)?", was analyzed using sequential multiple regression analysis. AIS was found to have a statistically significant correlation to APS ($r = .177, p < .05$) but no significant correlation existed for ApplGPA and APS ($r = .011, p > .05$). The overall model was evaluated to assess if AIS was effective in predicting

development of professional characteristics, while controlling for the effects of ApplGPA. APS was used as the dependent variable and AIS as the independent variable, with ApplGPA being controlled. GPA at application (ApplGPA) to upper division nursing courses was found to account for none ($R^2 = .000, p > .05$) of the variance and only contributed 6.1% ($\beta = .061, p > .05$) in predicting preceptor scores (APS). However, interview scores (AIS) were significant with 3.5% variance ($R^2 = .035, p < .05$) and a contribution of 19.3% ($\beta = .193, p < .05$). These findings suggest that ApplGPA does not contribute to the predictability of professional role development but AIS does hold a 19.3% predictability of development of professional characteristics. Results were statistically significant ($F_{change} (1,123) = 4.400, p < .05$), indicating that average interview scores (AIS) do predict development of professional characteristics without the influence of application GPA (ApplGPA).

Using the same sequential multiple regression methods, evaluation of specific professional characteristics within the preceptor scoring items for critical thinking (CT), communication (Comm), and professional behavior (PR), were computed to assess predictability of development of professional characteristics. GPA at application (ApplGPA) to upper division nursing courses did not account for a significant variance of professional development but interview scores (AIS) were associated with a 2.6% variance for CT ($R^2 = .026, p > .05$) with a 16.8% contribution to the prediction ($\beta = .168, p > .05$), 3.2% variance for Comm ($R^2 = .032, p < .05$) with a 18.4% contribution of prediction ($\beta = .184, p < .05$), and 1% variance for PR ($R^2 = .010, p > .05$) with a 10.5% contribution toward the prediction ($\beta = .105, p > .05$). These findings suggest that interview scores have the most significant and largest predictability of development of

professional characteristics in the area of communication and contributed 18.4% ($\beta = .184, p < .05$) in predicting development nursing characteristics. The variables of CT and PR did not reveal statistically significant results. Therefore, the only results of statistical significance were for Comm ($F_{change} (1, 123) = 4.006, p < .05$), indicating that interview scores can predict development of professional characteristics in the area of communication.

Table 4.3

Hierarchical Multiple Regression for Question Two

QUESTION 2										
IV	<u>Overall Model</u>			<u>DV</u>						
	APS		N	Critical Thinking		Communication		Professional Role		N
	β	R^2		β	R^2	β	R^2	β	R^2	
		<u>change</u>			<u>change</u>		<u>change</u>		<u>change</u>	
ApplGPA	.061	.000	138	-.001	.002	.049	.000	.066	.001	126
AIS	.193*	.035*	138	.168	.026	.184*	.032*	.105	.010	126

ApplGPA (Application GPA), AIS (Average Interview Score), APS (Average Preceptor Score)
 Significant: *** $p < .001$, ** $p < .01$, * $p < .05$

Summary

This chapter presented the research findings of a longitudinal study of two nursing student cohorts interviewed for admission in fall 2008 and fall 2009. Findings from statistical analysis of predictors for student retention and success throughout the nursing curriculum as well as predictors of development of professional characteristics were presented. The researcher used Microsoft® Excel and SPSS Version 16 to complete data analyses.

Descriptive statistics were provided and explained. Results found the mean age of students applying to upper division nursing school used in this study to be 23.83 with a mode of 20. The majority of students were female (94.6%) and most with a Caucasian ethnicity (73%). Only 40% of students who applied to upper division nursing courses completed the program with the main reason for attrition was due to admission failure or drop in GPA after all pre-requisite courses were completed.

Hierarchical regression analyses were conducted to determine the predictability of variables while controlling for the independent variable application GPA (ApplGPA). GPA at time of application to upper division nursing school was a significant predictor of success in the nursing program (NsgGPA) but when interview scores (AIS) are added there was a 51.5% ability to predict program completion represented by NsgGPA. Neither, ApplGPA or AIS were individually able to predict the aptitude to pass the E² exam thus predicting the ability of successfully achievement on the licensure exam (NCLEX-RN) but combined a 34.8% prediction can be made.

Multiple regression analyses were executed to establish the ability for AIS in predicting the development of professional characteristics while controlling for ApplGPA. Results suggest that AIS does significantly predict development of professional characteristics without the influence of ApplGPA. Further analyses suggested that the professional behavior of communication (Comm) was 18.4% predictive of the development of these characteristics. Findings of statistical significance will be further discussed in Chapter 5.

Chapter 5: Summary, Discussion, and Recommendations

Purpose of the Study

The purposes of this study are to 1) to evaluate data from student interviews to discover significance, if any, of the interview process for identifying characteristics other than academic achievement, and 2) to evaluate correlation of pre-admission interview scores to retention and graduation of BSN students in one University setting. Subjects in the research were applicants interviewed and accepted to the baccalaureate nursing program at a public university in Alabama.

The research questions explored in this study included:

1. Do average interview scores (AIS), in addition to application grade point average (ApplGPA), assist in predicting retention and success in upper division nursing school as evidenced by the academic measurements (empirical knowing) with Health Education Systems, Inc. (HESI) Exit Exam (H^2) score(s) and GPA from nursing (NsgGPA) courses at graduation?
2. Do interview scores (AIS) assist in predicting the development of professional characteristics which lead to the satisfactory performance in clinical courses as measured by preceptor evaluations (APS) specific for critical thinking (CT), communication (Comm), and professional behavior (PR)?

This chapter offers a summary of principle points of the research project. The culmination of findings from the analysis of data will be introduced and discussed as they

pertain to the presented research questions. The implications for nursing education will be discussed and recommendations made for future research.

Summary of Results

This study explored the predictability of retention and success using interviews as a portion of the admission process to upper division nursing courses. Development of professional characteristics which correlate with those encouraged by the American Association of Colleges of Nursing (AACN) were explored using scores from preceptor evaluations. In order to attain the ultimate goal of minimized attrition within nursing programs through predicting those students who will most likely succeed from diverse backgrounds, it is necessary to ascertain information which offers an understanding of the attitudes and motivation students bring to the nursing program beyond academic scores.

The research questions presented in this study were answered. Question 1: Do average interview scores (AIS), in addition to application grade point average (ApplGPA), assist in predicting retention and success in upper division nursing school as evidenced by the academic measurements (empirical knowing) with Health Education Systems, Inc. (HESI) Exit Exam (E^2) score(s) and GPA from nursing (NsgGPA) courses at graduation? There was a statistically significant variance in interview scores, indicating that average interview scores (AIS) do predict the final nursing GPA above and beyond the ApplGPA. Used together, GPA at time of application (ApplGPA) and AIS can predict successful completion of the nursing program 19.9% of the time. Multiple regression was used to assess if a correlation existed for the predictability of ApplGPA and AIS with E^2 scores. While there was no statistical significance associated with ApplGPA or AIS as

independent predictors of success on the E^2 , the overall multiple correlation including both ApplGPA and AIS with E^2 scores was statistically significant.

Question 2: Do interview scores (AIS) assist in predicting the development of professional characteristics which lead to the satisfactory performance in clinical courses measured by preceptor evaluations (APS) and those specific for critical thinking (CT), communication (Comm), and professional behavior (PR)? In response to the first portion of the question, interview scores (AIS) did assist in predicting the development of professional characteristics which lead to the satisfactory performance in clinical courses as measured by preceptor evaluations (APS). A statistically significant correlation to APS but no significant correlation existed between ApplGPA and APS. Students' GPA at time of application (ApplGPA) was not statistically significant in predicting professional role development. However, statistical significance was found for AIS, indicating that AIS do predict development of professional characteristics without the influence of ApplGPA.

The second portion of question 2 was answered by more specific regression analyses of scales formed from the individual components on the eight-item preceptor scoring tool. Statistical significance of AIS in predicting the development of critical thinking (CT) or professional role (PR) behaviors was not noted. However, AIS were statistically significant in predicting development of professional characteristics in the area of communication (Comm).

Discussion of Findings

Results from this study add to the body of knowledge regarding the use of interviews as predictors of retention and success in nursing programs. However, replication of the study could provide additional data to confirm the findings in different

regions. Grades from pre-nursing courses in the form of GPA along with standardized testing have been used for admission criteria in many schools of nursing. Quantitative results obtained from GPA and standardized tests provide an understanding of academic achievement or what Carper (1978a) refers to as empirical knowing, one of the four patterns of knowing specific to nursing. This study supports the literature describing empirical knowledge as a means for predicting success of degree attainment in higher educational settings (Barkley, Phodes, & Dufour, 1998; Beeson & Kissling, 2001; Bradham, Dalme, & Thompson, 1990; Campbell & Dickson, 1996; Newton et al., 2007a, 2007b; Salder, 2003; Van Bragt et al., 2011). The current study found a statistically significant correlation between application GPA (ApplGPA) and final nursing GPA (NsgGPA) as well as HESI Exit Exam (E^2) scores, indicating that ApplGPA may predict successful completion of the nursing program and licensure exam. However, these grades provide an academic measurement of how well students have performed related to empirical knowledge and do not provide insight into non-academic characteristics desired in Carper's other three patterns of knowing (ethical, aesthetic, and personal) specific to the nursing professional.

Little research has been done on strategies for identifying which non-academic characteristics strengthen likelihood of success in higher education (Dante, Valoppi, Saiani, & Pales, 2001; Donaldson et al., 2010; Mountford, Ehlert, Machell, & Cockrell 2007). Non-academic attributes are difficult to assess using conventional methods. Educators have been challenged with how to measure these attributes for admission purposes (Hughes, & Barrie, 2010; Knight & Page, 2007). Interviews were used in this study as an option to evaluate if students possess non-academic characteristics defined by

the American Association of Colleges of Nursing (AACN), American Nurses Association (ANA), and the International Council for Nursing (ICN) as essential professional attributes (see Table 2.1). The goal of the interview process was to allow consideration for admission of students with lower GPAs.

Limited research has been conducted on the use of interviews for admission into nursing schools. Donaldson et al. (2010) used interviews to identify characteristics that best correlate to the nursing profession. The study found very high interview scores predictive of success, low scores predictive of failure and median scores not useful. The current study found AIS alone were not statistically significant in predicting NsgGPA or E² success. However, when AIS were measured together with ApplGPA, a statistical significance was found thus strengthening the predictability of success and retention of nursing students when interviews are used during the admission process. The discovery supports similar findings of Mountford et al. (2007) where face-to-face interviews indicated a positive significant correlation between personal characteristics of scholarship, professionalism, and overall presentation in predicting suitability for the program.

The current study reports AIS as predictive of program success above and beyond ApplGPA, but more specific assessment findings of the non-academic characteristics resulted from the average preceptor scores (APS) obtained from clinical evaluations during students' final clinical experience (preceptorship). Specific professional characteristics of critical thinking (CT) and professional role (PR) within the preceptor scoring items were not found to be statistically significant in predicting development of professional characteristics. The third area evaluated with the preceptor scoring tool was

communication (Comm). Ehrenfeld and Tabak (2000) reported group interviews as an opportunity to assess communication skills including non-verbal communications, eye contact, critical reasoning, self-control, leadership, and eloquence. A statistically significant result from the current study indicated interviews may provide assessment of communication characteristics students possess upon application which may lead to successful development of professional communication skills. Findings from this study support prior findings that communication skills at the time of interview may further develop through the nursing program and are demonstrated by students during clinical practice.

Critical thinking (CT) and professional role (PR) development may not become fully developed until socialized into a practice setting following successful program completion. Grainger and Bolan (2006) support this assumption with findings from their study reporting professional self-concept and life orientation do change throughout the educational process unlike caring orientation which remains constant from beginning to end of the nursing program.

Recommendations

The recommendations from this study include the following areas: recommendations for nursing education and future research. The following suggestions address the two areas separately:

Recommendations for Nursing Education

1. The importance of success in completion of nursing programs impacts numbers of graduates prepared to meet the future needs of healthcare (Newton, Smith, &

Moore, 2007; Newton, Smith, Moore, & Magnan, 2007; Salder, 2003; Seago, Wong, Keane, & Grumbach, 2008; Seldomridge & DiBartolo, 2004). Faculty must focus on identifying students with an aptitude for completing the nursing education program therefore improving graduate numbers. GPA at time of application to upper division nursing courses was identified as a predictor of success but when interviews are added as an evaluation tool along with application GPA the prediction was strengthened. Nursing programs should consider adding interviews in combination with GPA as a portion of the admission process in order to increase the possibility of admitting those students most likely to succeed.

2. Interviews added to the ability to predict success in the nursing program but a clear understanding of non-academic characteristics or traits significant for success were not identified. It is not enough to increase numbers of graduates without attention to students capable of achieving success on the national licensure exam for practice and competence in providing safe, holistic nursing care (Grainger & Bolan, 2006; Newton, Smith, & Moore, 2007; Sadler, 2003). Faculty need to explore more specific learner characteristics that lead to motivation and academic success. Identification of specific characteristics would enhance development of a tool for identification of these traits during the interview process. Collection of qualitative data from nursing students prior to graduation, from nursing faculty, and from nurses in practice settings may provide this information.

3. Preceptor evaluations validated learner development in professional communication behaviors upon program completion. Nurse educators need to be aware that communication skills can be more readily evaluated from beginning to end of nursing programs. However, critical thinking and professional role behaviors continue to develop once students graduate, obtain licensure, and become practicing nurses.

Recommendations for Future Research

1. Changes in the study design to include qualitative data would strengthen the quantitative findings of this study and allow for a clearer understanding of the non-academic characteristics or motivation for choosing nursing.
2. Careful archiving of all data for every student related to each variable would prevent missing data and provide a larger sample, to improve generalizability.
3. Inter-rater reliability may be improved with a more formal discussion of the interview process and grading instrument used in the interview, as well as the preceptor scoring tool for those involved in scoring students. Examples of ratings at variable levels would provide a standardized reference for raters.
4. Further exploration of positive non-academic characteristics of students which correlate with movement toward professional nursing practice is warranted.
5. Continued development of a valid and reliable instrument to measure non-academic characteristics is needed, specifically for those traits valued in the nursing profession.
6. Further research should be conducted to evaluate the effectiveness of interviews for admission to nursing school and the effect on increasing diversity among

successful students to promote practicing professionals more consistent with the population nursing serves.

Summary

Nurse educators are faced with the challenge of meeting the critical demand for baccalaureate nursing programs to provide increased numbers of graduates prepared to meet the future needs of healthcare. Students begin nursing programs with patterns of knowing (or ways of understanding), grounded in academic and non-academic experiences. Admission to nursing programs has revolved around those most academically prepared. Interviews were seen as a way to assess those non-academic characteristics which may improve success and retention of nursing students. Face-to-face interviews allow informed judgment of interpersonal relations, communication, future goals, understanding of nursing, leadership qualities, and overall demeanor (Trice, 2007).

The results of this study indicate that interviews can assist in predicting retention and success in nursing programs and should be used in conjunction with pre-nursing GPAs for admission into upper division nursing programs. Interview scores were effective in identifying non-academic professional characteristics in the area of communication. Statistically significant results identified the further development of communication by the end of the nursing program.

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Appendices

Appendix A

Interview Instructions for New Student Interviews

Interview Instructions for New Student Interviews

Group Facilitator

- Mix up seating of interviewers and applicants in somewhat circular format
- Congratulate applicants on obvious academic success
- Remind applicants that despite information in application, interviewers have not committed information to memory about individual students so that each enters the interview with a clean slate
- Have each person briefly introduce self; name and where from (2-3 sentences)
- Set the stage for open discussion
 - No right or wrong answers
 - No order of response
 - Opportunity for exchange of ideas

Interviewers

- Ask one or two questions per interviewer and remember responses of the candidates
- Encourage individuals to respond by making eye contact
- Invite very quiet applicants to answer by calling on them by name if appropriate
- Limit opportunities for any one applicant to monopolize conversation, including interrupting if necessary
- Provide time for applicants to ask questions but limit length of responses

Group Facilitator

- Wrap up interview session with following information:
 - Admission is something that AUM takes seriously due to impact on students' lives**
 - Many qualified applicants will not be admitted despite excellent credentials
 - These interviews are use as one piece of information for making admission decisions
 - Letters will be sent next month (information will NOT be given over the phone)
 - Letters will be sent to those accepted, those on the waiting list and those not accepted into this year's program
 - Ask applicants to leave name tags on the back of the chair when they leave

Thank individuals for coming.

**Prior to dismissal of the group, emphasize that nursing is a rewarding, but also a demanding profession requiring much hands on care of all types of patients, many of whom will be very old and very sick. Early in clinical experiences, students will be exposed to infectious illnesses, human excretions, odors, and even somewhat hostile situations. Although we hope every applicant has a realistic image of what nursing involves, we have lost more students who come to realize after 2-3 weeks of clinicals that they do not enjoy this type of work. To withdraw at that time may have kept someone else with their heart in nursing from getting into the program. If any applicant has any doubts about their true desire to become a nurse, we ask that they would notify us in writing to withdraw their application at this time.

Interview Teams

Interview teams consist of 2 faculty members and 1 person from the community. Each group will have 4-5 interviewees. You will do a total of 4 groups. The interviews will last approximately 45 minutes each and then you will immediately score the interviewees.

Applicants

- Applicants will report to the auditorium 30 minutes prior to the scheduled interview time
 - Sign in (current address/phone number)
 - Name tag
 - Get into groups
- The Student Helpers will bring students to the appropriate interview room

Student Helpers

- Greet the interviewees in the auditorium
- Have interviewees sign in and put on a name tag
- Escort interviewees to the appropriate interview room
- Collect scantrons from each group after each interview session and deliver them to faculty advisor

Interview Day

- Applicants seated among interviews
- Introductions
- Procedure explained
- Interview conducted
- Closing remarks from Team Leader
- Interviewees remove nametags and place them on the chair backs before leaving
- Scoring done immediately

- Each of 20 items scored on Scantron
- Scantrons given to Student Helper
- Student Helper takes Scantrons to faculty advisor

Appendix B
Interview Questions

Interview Questions

1. What do you envision when you think of the job of the nurse? (13-15)
2. Where do you see yourself in 5-10 years? (16)
3. Describe a community or group volunteer activity with which you have been involved and what it has taught you about leadership. (17-18)
4. You may have heard that nursing school is a lot of work. How do you plan to organize your time to balance your responsibilities? (19-20)
5. All of the candidates for this program are highly qualified, and there are more than we are able to accept. What would you like us to know about you that would make you a good nurse? (19-20)

Appendix C
Interview Scoring Instrument (ISI)

Interview Scoring Instrument

Verbal Communication

1. Organized thought clearly and concisely (focused; direct; to the point; not evasive or wordy; answers the question asked)
2. Articulate; with words clearly pronounced
3. Expressive (“alive”; speech animated; no monotone)
4. Persuasive and convincing
5. Used proper grammar
6. Answered questions without being defensive or hostile
7. Maintained appropriate balance between listening and speaking

Nonverbal Communication

8. Dressed appropriately (professional interview attire)
9. Poised during interview
10. Appropriate affect during interview; without excessive anxiety or negative cues

Information – General

11. Answers were exceptionally keen and insightful
12. Articulated specific examples (not broad “flowery” statements)

Information – Nursing

13. Offered accurate information about the nursing profession
14. Described characteristics of a nurse beyond technical skills

Information – Goals

15. Recognized roles of the nurse beyond “helping people”
16. Articulated future goals related to nursing (committed to nursing profession)

Information – Leadership & Service

17. Articulated personal leadership qualities
18. Articulated strong service examples

Information – Unique Attributes

19. Articulated personal unique attributes other than caring
20. Described how unique attributes will contribute to the nursing profession

SCORING

- All questions will provide data relevant for scoring items 1-12
- Question 1 will provide data relevant for scoring items 13-15
- Question 2 will provide data relevant for scoring item 16
- Question 3 will provide data relevant for scoring items 17-18
- Question 4 will provide data relevant for scoring items 17-18
- Question 5 will provide data relevant for scoring items 19-20

Please circle corresponding score on the scantron for each of the twenty questions using the Likert-type scale as follows:

A = Strongly Agree

B = Agree

C = Neither Agree or Disagree

D = Disagree

E = Strongly Disagree

Appendix D
Preceptor Scoring Tool

AUBURN UNIVERSITY MONTGOMERY
School of Nursing
Evaluation of Senior Students by Preceptor

Evaluation of BSN student is essential to demonstrate effectiveness of the nursing program. Input from preceptors is imperative. Please complete the questionnaire to provide feedback to the faculty.

Based upon your observation of this BSN student, please rank how effective you believe the undergraduate nursing program was in preparing him/her to ... (Circle the response number that indicates the graduate's degree of preparation according to the following scale.)

Scale: Not Effective Effective Extremely Effective
 1 2 3 4 5

1. Incorporate caring and the nursing process into professional nursing practices.
 1 2 3 4 5
2. Use critical thinking in assisting diverse clients to achieve optimal functioning.
 1 2 3 4 5
3. Collaborative with clients and members of interdisciplinary health communities to promote health and adaptation.
 1 2 3 4 5
4. Integrate scientific principles into performance of technical skills.
 1 2 3 4 5
5. Assume responsibility for practice, upholding legal and ethical standards, lifelong learning and professional development.
 1 2 3 4 5
6. Perform a holistic assessment and plan interventions for diverse clients.
 1 2 3 4 5
7. Allocate and manage physical, fiscal, and human resources.
 1 2 3 4 5
8. Serve as a member and leader within the profession influencing patterns of behavior.
 1 2 3 4 5

Appendix E
Institutional Review Board Approval Letters

From: Human Subjects [hsubjec@auburn.edu]
Sent: Wednesday, June 22, 2011 4:28 PM
To: Cam Hamilton
Cc: Sheri Downer; David Shannon
Subject: Protocol #11-199 Ex 1106, approved
Attachments: Investigators Responsibilities rev 1-2011.docx; map to Ramsay offices.pdf

Dear Mrs. Hamilton,

Your protocol entitled "Interviews as a Predictor of Success to Support Admission to Nursing School" has been reviewed. The protocol has been approved as "Exempt" under federal regulation 45 CFR 46.101(b)(4).

This e-mail serves as official notice that your protocol has been approved. Please conduct your study at your convenience. A formal approval letter will not be sent unless you notify us that you need one.

By accepting this approval, you also accept your responsibilities associated with this approval. Details of your responsibilities are attached. Please print and retain.

Your protocol will expire on June 16, 2012. Put that date on your calendar now. About three weeks before that time you will need to submit a final report or renewal request. (You might consider sending yourself a reminder e-mail to be received late next May.)

If you have any questions, please let us know.

Best wishes for success with your research!
Susan

IRB / Office of Research Compliance
155 Ramsay Hall, basement ***SEE ATTACHED MAP*** Auburn University, AL
36849
(334) 844-5966
hsubjec@auburn.edu

**AUBURN UNIVERSITY INSTITUTIONAL REVIEW BOARD for RESEARCH INVOLVING HUMAN SUBJECTS
RESEARCH PROTOCOL REVIEW FORM**

For Information or help contact THE OFFICE OF RESEARCH COMPLIANCE, 115 Ramsay Hall, Auburn University
Phone: 334-844-5966 e-mail: hsubjec@auburn.edu Web Address: <http://www.auburn.edu/research/vpr/ohs/>

Revised 03.26.11 - DO NOT STAPLE, CLIP TOGETHER ONLY.

Save a Copy

1. PROPOSED START DATE of STUDY: Jun 3, 2011

PROPOSED REVIEW CATEGORY (Check one): FULL BOARD EXPEDITED EXEMPT

2. PROJECT TITLE: Interviews as a Predictor of Success to Support Admission to Nursing School

3. Cam A. Hamilton Graduate Student Education 334-244-3429 chamilt1@aum.edu
PRINCIPAL INVESTIGATOR TITLE DEPT PHONE AU E-MAIL
570 Bellehurst Drive Montgomery, AL 36109 hamilc1@auburn.edu
MAILING ADDRESS FAX ALTERNATE E-MAIL

4. SOURCE OF FUNDING SUPPORT: Not Applicable Internal External Agency: _____ Pending Received

5. LIST ANY CONTRACTORS, SUB-CONTRACTORS, OTHER ENTITIES OR IRBs ASSOCIATED WITH THIS PROJECT:

6. GENERAL RESEARCH PROJECT CHARACTERISTICS

<p align="center">6A. Mandatory CITI Training</p> <p>Names of key personnel who have completed CITI: Cam Hamilton <input checked="" type="checkbox"/> David Shannon <input checked="" type="checkbox"/></p> <hr/> <p align="center">CITI group completed for this study: <input checked="" type="checkbox"/> Social/Behavioral <input type="checkbox"/> Biomedical</p> <p align="center">PLEASE ATTACH TO HARD COPY ALL CITI CERTIFICATES FOR EACH KEY PERSONNEL</p>	<p align="center">6B. Research Methodology</p> <p>Please check all descriptors that best apply to the research methodology: Data Source(s): New Data <input type="checkbox"/> Existing Data <input checked="" type="checkbox"/> Will recorded data directly or indirectly identify participants? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Data collection will involve the use of: <input checked="" type="checkbox"/> Educational Tests (cognitive diagnostic, aptitude, etc.) <input checked="" type="checkbox"/> Interview / Observation <input type="checkbox"/> Physical / Physiological Measures or Specimens (see Section 6D) <input type="checkbox"/> Surveys / Questionnaires <input type="checkbox"/> Internet / Electronic <input type="checkbox"/> Audio / Video / Photos <input checked="" type="checkbox"/> Private records or files</p>
<p align="center">6C. Participant Information</p> <p>Please check all descriptors that apply to the participant population. <input checked="" type="checkbox"/> Males <input checked="" type="checkbox"/> Females <input type="checkbox"/> AU students Vulnerable Populations <input type="checkbox"/> Pregnant Women/Fetuses <input type="checkbox"/> Prisoners <input type="checkbox"/> Children and/or Adolescents (under age 19 in AL) Persons with: <input type="checkbox"/> Economic Disadvantages <input type="checkbox"/> Physical Disabilities <input type="checkbox"/> Educational Disadvantages <input type="checkbox"/> Intellectual Disabilities Do you plan to compensate your participants? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p align="center">6D. Risks to Participants</p> <p>Please identify all risks that participants might encounter in this research. <input checked="" type="checkbox"/> Breach of Confidentiality* <input type="checkbox"/> Coercion <input type="checkbox"/> Deception <input type="checkbox"/> Physical <input type="checkbox"/> Psychological <input type="checkbox"/> Social <input type="checkbox"/> None <input type="checkbox"/> Others: _____ _____ _____ <i>*Note that if the investigator is using or accessing confidential or identifiable data, breach of confidentiality is always a risk.</i></p>
<p>Do you need IBC Approval for this study? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes - BUA # _____ Expiration date _____</p>	

Auburn University Institutional Review Board has approved this document for use from: 6/17/11 to 6/18/12
 Protocol # 11-199 EX1106

RECEIVED
MAY 26 2011

FOR OHSR OFFICE USE ONLY

DATE RECEIVED IN OHSR: 5/26/11 by UB PROTOCOL # 11-199 EX1106
 DATE OF IRB REVIEW: 5/17/11 by KJE APPROVAL CATEGORY: 45 CFR 46.101(b)(4)
 DATE OF IRB APPROVAL: _____ by _____ INTERVAL FOR CONTINUING REVIEW: 1 year
 COMMENTS: no revisions



Date: June 17, 2011

To: Cam Hamilton
School of Nursing

From: Dr. Glen E. Ray, Chair, IRB

Re: Proposal for research, "Interviews as a Predictor of Success to Support Admission to Nursing School" IRB file #2011-22

AUM IORG #: 0005227
AUM IRB #: IRB00006286
FWA#: 00012889

Thank you for submitting your research protocol to the IRB. Given the nature of your protocol, your proposal is receiving an *expedited review* in accordance with guidelines set forth in *45 CFR 46* (Code of Federal Regulations). The information that you are using involves data collected through the use of questionnaires and surveys. Information will be confidential and the risk is minimal. This protocol is approved under *category 7* of the *expedited review* process. Please do not make any changes to your research protocol. If you make any changes to your protocol please halt your research and send the changes to the chair of the IRB for further review. Attached are your stamped (approved) documents and forms.

Your IRB approval is valid for one year for these dates: **June 17, 2011 to June 16, 2012**. At the end of the project you will be asked to file an IRB Closure Report. If you do not complete your research you may file an IRB Extension Request with this office to continue your work.

Good luck with your project.

Cc: Debbie Tomblin, IRB Administrator

Enclosures

AUBURN UNIVERSITY AT MONTGOMERY
Institutional Review Board
P.O. Box 244023, Montgomery, AL 36124-4023, 334.244-3250, www.aum.edu