A STUDY TO INVESTIGATE THE SIGNIFICANCE OF THE PROGRAM SPECIFIC HESI IN IDENTIFYING THE AT RISK STUDENT

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GRADUATE COMMITTEE APPROVAL

I am submitting herewith a field study written by Holly J. Gillon entitled *A Study*

to Investigate the Significance of the Program Specific HESI in Identifying the At Risk

Student. I have examined the final copy of this field study for form and content and

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_____
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A Study To Investigate The Significance of The Program Specific HESI in

Identifying The At Risk Student

Submitted in fulfillment for the requirement for Research 6990

Austin Peay State University

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Graduation May, 2006

ABSTRACT

The goal was to find a tool that, early in the program, would assist nursing school faculty in identifying the student at risk for failing the National Council Licensure Exam (NCLEX). To assist in this endeavor, HESI has developed an exit exam that is highly accurate in predicting success on the NCLEX. HESI also constructs an exam that is unique to each nursing school's program of instruction, and tests the mid level student over the specific program content that they have completed. This study sought to identify if a significant relationship existed between the student scores for the Program Specific HESI and the student scores for the Exit HESI exam.

The results of this study demonstrated that a student who failed the Program Specific HESI had a 62% risk of also failing the Exit HESI exam, regardless of remediation provided at the time of failing the Program Specific HESI. A Chi Square statistical analysis resulted in a p value of 0.001. Since, the HESI tests the student's ability to critically think, it can be inferred from this study that short term remediation programs which are geared to helping the student pass the Program Specific HESI, do not benefit the student's critical thinking ability on a long term basis.

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ACKNOWLEDGEMENTS

To my husband who has been there for me through all of the ups and downs for the past

38 years. You give me strength to do what "I think I can."

To my daughters, you supported and cheered me on. I am as proud of you as you are of

me.

To my committee chair; Dr. Luck. You never turned me away even when I dropped in

unannounced; which was most of the time. Thank you for your patience

and help in completing this project.

To my committee members; Dr. Lowrance and Mrs. Danielle White. You always had an

open door, a smile, and words of encouragement.

To Dr. Burgess, my mentor, my friend. You always answered my calls, had an open

door, took that moment to say "just the right thing," and gave such wise

advice.

I thank you all for the roles that you have played in my life

TABLE OF CONTENTS

CHAPTER I

Introduction and Statement of the Problem

Much of the United State's nursing workforce is made up of aging baby boomers who will be retiring within the current or next decade negatively impacting a profession already experiencing a critical shortage. Currently the supply of registered nurses is at 8% less than the demand, or 168,356 less than the 2,196,904 needed by the nation to provide care to the population. By the year 2010 the projected shortage is 275,215 or 12%, and by 2015 the United States is looking at a shortage of 507,063 or 20% (2003, Department of Health and Human Services). It is imperative that more students are recruited into nursing schools and that those students succeed in their program of study (Kilcullen, 2004; Nibert, 2003; U.S. Department of Health and Human Services). The study of nursing is rigorous and when students are unsuccessful they often feel a sense of failure and diminished self esteem. Failure also delays their entry into the workforce and consequently lowers their earning power until they pass the licensure exam. A concern for schools of nursing is that failure rates can adversely effect the accreditation and reputation of the school (Kilcullen, 2004; Nibert, 2003). It is imperative to identify the at risk student and implement interventions for the purpose of nurturing his or her success (Daley, Kirkpatrik, Frazier, Chung & Moser, 2003).

Success was defined by McQueen, Shelton & Zimmerman (2004) as "a nursing program's first time writing and passage rate on the national examination for registered nurses" (55). In fact, an important benchmark used by the accrediting organizations, in identifying the success of a nursing program, is the ability of the students to pass a nationally standardized licensure test at the completion of the program on their first attempt. To assist in meeting this benchmark, many schools have implemented

standardized testing as part of their self evaluation of their program (Nibert, Young & Britt, 2003).

The Nurse Entrance Test was noted by Sayles & Shelton (2005) as being required by some programs to assess student ability prior to being accepted into the program. Other measurement tools include the use of program specific exams and exit exams to assess student readiness for taking the National Council Licensure Exam (NCLEX). The Health Education Systems Incorporated (HESI) Exit Exam helps faculty to identify low scoring students who could potentially benefit from beginning a program of remediation. (Daley et al., 2003). Many nursing schools have used an exit exam as a predictive tool to aid them in identifying the at risk student. It is not uncommon for a nursing school to establish progression policies based on the student's results on these exams (Spurlock & Hanks, 2004; English & Gordon, 2004). The inherent problem with the exit exams is that they are taken by the student at the end of the program, when the student is more concerned about graduation rather than remediation.

This study sought to determine if a significant relationship existed between the student's score on the program specific HESI and the successful progression of the student to senior level classes. Could the program specific HESI serve as a potential early identifier of the at risk student so that earlier remediation could be started rather than later at the conclusion of the program? The study also investigated if there was a significant relationship between the student's score on the HESI Exit Exam and the student's passing the NCLEX on the first attempt.

This field study was conducted at a baccalaureate nursing program in Tennessee that implemented the use of the HESI three years ago and the program specific HESI two years ago. Since implementing the use of these exams the school established a

progression policy based on HESI score outcomes with the score of 85 being the school-appointed passing score. The students were required to be successful on the HESI exam prior to advancing on to the next level. The student was allowed three attempts, with remediation prior to each attempt. If the student remained unsuccessful, the student was required to repeat a capstone course before attempting the HESI again.

Purpose of the Study

The purpose of this study was to determine if there was a significant relationship between the student scores on the program specific HESI exam and the Exit HESI exam. Second, the purpose of this study was to determine if there was a significant relationship between the student scores on the Program Specific HESI and the initial NCLEX exam.

Significance of the Study

This study is significant because currently the graduating students at this TN university are not allowed to sit for the NCLEX exam without first passing the HESI Exit Exam, and the junior students are not allowed to progress to their senior year without first passing the program specific HESI. This study is significant to the student because this progression factor potentially delays their progress through the program and into the profession. The study is important to the school because first time failure rates on the NCLEX impact the accreditation status of the school. It is important to the faculty and the student because early identification of the at risk student will allow for early remediation to supplement that student's potential for success on these exams.

Research Questions

1. Is there a significant relationship between the student scores on the program specific HESI exam and the Exit HESI Exam?

2. Is there a significant relationship between the student scores on the Program Specific HESI and the initial NCLEX exam?

Hypotheses

1. There is no significant relationship between program specific HESI scores and Exit HESI Exam scores.

2. There is no significant relationship between exam scores on the program specific HESI and the results on the initial NCLEX attempt.

Limitations

A limitation of this investigation is that the results will only be generalizable to the baccalaureate program where the study was conducted and not to other populations. Additionally, there are only three complete years of Junior HESI progression scores to investigate where those Juniors also took the HESI Exit Exam. The data of HESI results kept at the School of Nursing were not centralized, thus making the ease of finding results difficult.

Another limitation of this study was the disorganized manner of collection of data within the School of Nursing that decreased the sample size from a potential of 209 to a 122 convenience sample. The convenience sample was not separated by age, sex, or race. The Program Specific HESI and Exit HESI exam were the only instruments utilized during this study. The students were all from the same nursing program.

Assumptions

The principal investigator (PI) assumed that the HESI exam scores sent to the baccalaureate program were correct. The PI assumed that the records kept by the school of nursing regarding student pass rates on the initial NCLEX exam were correct.

Definition of terms

1. At risk student: a student who is at risk for failing in the program of study or failing the NCLEX exam on the first attempt.

2. Capstone Course: is one that the school of nursing has determined that the student must pass in order to graduate.

3. GPA: "Cumulative grades on a scale of 4.0. Minimum cumulative grade of [2.8] is required for entry into the nursing program as a [2nd] semester sophomore. Students are admitted following successful completion of [core pre-nursing classes]" (Kilcullen, 2004, 19).

4. HESI: Health Education Systems Incorporated Exit Exam (E2). "The E2 is a comprehensive, computerized, criterion-referenced test designed to be administered during the last semester or quarter of the curriculum that also allows for comparison with external norm groups and can therefore be classified as a standardized test within the domain of nursing" (Nibert, 2003, p.8).

5. "Low-scoring students were defined as those students whose probability scores were in the 69% and below range" [on the HESI] (Newman, Britt & Lauchner, 2005, 18S).

6. NCLEX: National Council Licensure Exam

7. Predicted passes: students whose probability scores on the exit exam were in the 90%-99% range (Nibert et al., 2003).

8. Progression policy: "a school policy that withheld graduation or permission to take the licensure exam until the student had obtained a designated score on the E2 [HESI Exit Examination]" (Spurlock & Hanks, 2004, 539).

9. Remediation: "was broadly interpreted to be any type of additional study that was based on E2 [exit exam] findings. (Nibert & Young, 2005, 26S)

10. Success: "a nursing program's first time writing and passage rate on the national examination for registered nurses" (McQueen et al., 2004, 55).

CHAPTER II

Literature Review

The Health Education Systems, Incorporated (HESI) exams are being used by schools of nursing as tools to assess readiness of the student to take and pass the National Council Licensure Examination for Registered Nurses (NCLEX) on the student's first attempt. By using the HESI in this manner schools are attempting to ensure student pass rates that will meet accreditation criteria (Spurlock & Hanks, 2004). Many schools have established progression policies based on the student's ability to obtain a "school-set minimum score" on the HESI exam (Spurlock & Hanks, 2004). Nibert, Young & Britt, (2003) noted that only students with a score ranging between 90 to 99.99 percent were identified by the HESI as "predicted to pass" and that 36 of the 45 schools in their study used the minimum score of 85 for their passing score to allow student progression (50). Spurlock & Hanks (2004) caution on using only the HESI outcomes to establish school progression policies. These authors noted that other criteria predictive of student success would provide a more well rounded assessment process for the student and would help the school better identify the student in need of early remediation.

Beeman & Waterhouse (2001) studied 21 variables as predictors of success and found the grades in the foundation nursing course, "Pathophysiology II, Wellness Nursing, Restorative Nursing Interventions I and II courses, and the number of C+ or lower nursing theory grades" were the most dependable factors that identified a potential student at risk (163). Beeson & Kissling (2001) noted that many schools are reviewing potential candidate files for acceptance into the program during their sophomore academic year. They found that sophomore students with a significantly higher grade in

biology and the foundational sophomore nursing courses were more likely to pass the NCLEX. "Students who received one C in a nursing course by the end of the sophomore year were more likely to fail" the NCLEX (p125). Another study agreed that approximately 76% of the students at risk for failure on the NCLEX could be predicted by the end of the sophomore year but cautions that this may be too early in the educative process to make this determination. A determination made this early in the program may initiate a "self fulfilling prophecy" or precipitate student attrition from the program and that the better time to make this prediction is at the conclusion of the junior year in the program (Mills, Sampel, Pohlman & Becker, 1992, 407).

Strategies to assist the student to succeed include assigning an advisor/mentor to the student at the beginning of their academic career and keeping that advisor throughout their education process. This enables a nurturing relationship to form and allows the mentor to council on success strategies that include fun, rest, exercise, diet, praise, listening, and giving of advice (Sayles & Shelton, 2005). Other successful interventions include utilizing the student's learning style in planning the lecture content so that learning is student focused (McQueen et al., 2004).

Endress (1997) as cited by Daley et al. (2003) found there to be no difference in success on the NCLEX based on race and being foreign born. Many other researchers, however, identified barriers to learning experienced by the foreign born student (Merrill, 1998; Yoder, 2001; Yahiro & Yago, 1997. The English as a Second Language (ESL) nursing student has the impact of cultural differences and, in many cases, language barriers as well (Merrill, 1998). Merrill (1998) also identified the positive role that feeling a part of the university community plays in assisting the ESL student to be successful. Exit exams are being used as a method of assessing the readiness of a

nursing student to succeed on the first attempt when taking the NCLEX (Nibert, Young & Adamson, 2005S).

Daley et al. (2003) found that students who earned a higher final grade on their senior medical-surgical course, and students with a letter grade of A or B were more consistently predicted to be successful on the NCLEX. O'Reilly (2000) found that the GPA in core courses and microbiology were the most favorable at predicting college success.

Exit exams have been used for many years by Schools of Nursing as a benchmark demonstrating program effectiveness in compliance with accreditation demands and also to establish a reputation of excellence in the opinion of the public. The National League for Nursing Accrediting Commission (NLNAC) and the Commission on Colleges of Nursing Education (CCNE) are accrediting bodies which mandate outcomes based program evaluation where strengths and weaknesses are identified. Utilizing an exit exam meets this particular benchmark (Morrison, Adamson, Nibert, and Hsia, 2004.; Nibert, 2003.; Billings et al. 1996.; Newman, Britt, & Lauchner, 2000.) The university in this study utilized the Mosby Assessment Test prior to adopting the HESI Exit Exam. The Mosby Assessment Test is completed as a paper and pencil exam where results are not immediately available to the student. Lauchner, Newman & Britt (1999) identified the Mosby Test as a "moderate to strong predictor of [National Council Licensure Exam] NCLEX success" (5S), and Daley et al. (2003) found the HESI Exit Exam was more sensitive in it's predictability than the Mosby exit exam. The findings from the fourth annual study on the predictability of success of the HESI demonstrated that the exam had a 98.3% accuracy in predicting success on the NCLEX where success is designated by the student score between a 90-99.99% on the HESI (Nibert et al., 2002). Spurlock &

Hanks (2004) addressed the sensitivity and specificity of the HESI as the exam's ability to correctly predict outcomes, in that students who were predicted to pass did in fact pass the NCLEX and students who did not receive a prediction to pass did not pass the NCLEX. This is important because progression policies are being based on HESI results in many schools.

The HESI Exit Exam has been rapidly growing in popularity. Morrison, et.al. (2004) reported a 565% increase in Exit Exam use within a 4 year period between 1999 and 2003. The exit exam offered by HESI is a computerized, comprehensive exam similar to the National Council of Licensing Examination (NCLEX) format that the student would experience. The Exit Exam is constructed utilizing the classical test theory, follows the National Council State Boards of Nursing [NCSBN] NCLEX test blueprint, and is under continual revision identified by annual reliability and validity studies (Nibert, 2003). Internal consistency is measured by the Kuder-Richardson Formula 20 (KR-20) which is used along with item difficulty, item discrimination, and other measures that are part of the HESI Predictability Model (HPM). The HPM is a mathematical process which calculates the probability of passing. HESI has been supported in the literature as a highly accurate predictor of NCLEX success and utilizes a format which has demonstrated success at testing the critical thinking abilities of the senior student preparing to enter the workforce.

Nibert (2003) identifies this construct validity in association with the measurement of critical thinking as an important construct expected of the entry level RN novice. The studies to date have demonstrated the accuracy in the Exit Exam's predictability of passing the NCLEX. Hanks (2005S) cautions that the exam is a weak predictor of those likely to fail and Nibert (2003) also notes that few studies have isolated

factors that identify the student at risk for failure of the NCLEX; that faculties have not had research based evidence with which to base their benchmarking decisions of passing or failing scores that result in placing students into remediation. Spurlock and Hanks (2004) addressed the prediction of failure issue by identifying that students who scored in the A/B designation were predicted to pass. However, those scoring less than 90 were not definitively predicted to pass or fail. That being the case these two researchers took the stand that students scoring in the C-H designations were predicted to fail. The scoring category A/B has scoring interval of 90-99.99, category C has an interval of 85-89.99, category D has an interval of 80-84.99, category E/F has an interval of 70-79.99, and category G/H is equal to or less than to 69.99 (Spurlock & Hanks, 2004). The score of 85 is the most often used by faculties as the benchmark for progression or remediation (Nibert, 2003.; Spurlock & Hanks, 2004).

Many schools have implemented progression policies based on Exit Exam outcomes. These policies would require remediation of the low scoring student and retesting. A successful Exit Exam passing score is needed before the student is allowed to take the NCLEX. Several authors address the issue of remediation and different methods used by Schools of Nursing (Morrison, et al., 2004; Nibert et al., 2002 & 2003).

HESI not only offers an Exit Exam and a pre-entrance exam, but will also construct a program specific exam which can be taken by the student midway through the program to assess readiness for progression to more complex subject matter (Morrison, et.al., 2004; Spurlock & Hanks, 2004). Few studies document the reliability of predictability scores of the program specific exam, however Morrison, et al. (2004) noted that the determination of reliability was conducted in the same pathway as with other HESI exams. Some schools utilizing the program specific exam have instituted

remediation policies based on the student's score however, these decisions are being made without supportive research.

Numerous studies address the need to identify students who are at risk for failure early on in their program of study, because the consequences can be great for the student, school of nursing, and the profession. Consequences for students who are unsuccessful in their first attempt at passing the Exit Exam are determined by the school of nursing. The most frequent consequences, however, resulted in being denied eligibility to graduate and/or take the NCLEX, and receiving a failing or incomplete grade in a capstone course until successful in the Exit Exam (Spurlock & Hands, 2004.; Nibert, Young & Britt, 2003).

Consequences of failure on the NCLEX for the profession are the delay of additional nurses able to enter a profession already experiencing a shortage. A consequence of NCLEX failure for the students is the inability to assume positions that they were hired for thus creating a financial hardship, personal feelings of loss, grief and inadequacy (Nibert, 2003,; Daley et al., 2003), and low self esteem (Lauchner, Newman & Britt, 2005S). Consequences for the school of nursing revolve around accreditation issues and the reputation of the school (Nibert, 2003).

In conclusion, Morrison et al. (2004) discussed the HESI as a benchmark being used for accreditation requirements. Other researchers studied different factors which would help to identify students who may be at risk for unsuccessful progression in the program or NCLEX passage on the first attempt (Spurlock & Hanks, 2004; Beeman & Waterhouse, 2001.; Beeson & Kissling, 2001). The HESI, however, remains a popular tool being used by many schools to predict students who are most likely to pass the NCLEX and also as a determinant of progression policies (Morrison et al., 2004).

CHAPTER III

Methodology

Overview

This principal investigator (PI) collected, analyzed, and interpreted the data. In this descriptive study, data from graduates of the past three graduating classes of a baccalaureate nursing program in Tennessee were collected by recording their Program Specific HESI pass/fail results and also recording their HESI Exit Exam pass/fail results on their first attempt at taking each exam. The pass/fail results of the students first attempt at taking the NCLEX was also collected. Confidentiality was maintained through assignment of numbers to each of the students and not using names of the students within the study documents. This was done by the PI. After numbers were assigned, the documents linking the names to the numbers were destroyed by the PI.

Research Design

In this study the PI was investigating pass/fail scores of the Program Specific HESI exams taken at the junior level, and the Exit HESI exam scores taken at the senior level. The descriptive research design used an archival convenience sample of students spanning the past three graduating classes attending this university's School of Nursing. The study was non-experimental and before any research was conducted approval for the research was received from the Institutional Review Board of the institution.

Sample Set

The design of this study required archival data collection and did not require active involvement of participants. The sample was obtained from the HESI score data and NCLEX pass/fail data on site within the School of Nursing. The sample set was

made up of 122 students whose scores of the Program Specific HESI, HESI Exit Exam, and pass/fail result on the NCLEX were available.

Instrument

There were two instruments of use. These were the HESI exit exam and the program specific HESI progression exam. The Program Specific HESI is constructed specific to each individual nursing program and thus contains questions covering the specific curriculum presented to the student in that program. Since nursing programs differ in their curriculum sequencing and requirements, the Program Specific HESI is individualized for each program. The HESI is an exam which tests the student's ability to critically think through clinical situations which arise during the providing of nursing care. Nibert (2003) discussed critical thinking as an important, higher level of thinking, which a professional nurse must possess. The writers of the exam questions utilize the classical test theory when writing the exam questions, and the test designers use the Kuder-Richardson Formula (KR-20) to establish internal consistency of the exam. Research is conducted annually to provide evidence of the exam's validity (Nibert, 2003). Lewis (2005), references the Validity 5 report which places the predictive accuracy range for the HESI Exit Exam from 96.49% to 98.40% for baccalaureate, associate and diploma programs.

Procedure

The PI first collected the names of the graduating Senior nursing students for the academic years of 2003-2004, 2004-2005, and 2005-2006 so that the PI would know which student records to access. Next, the names of all students graduating during those years were compiled for the purpose of knowing which scores to access. The HESI examination database, which is kept in the school of nursing, was accessed and the scores

for each junior Program Specific HESI exam and senior Exit HESI exam were collected and recorded as a pass or fail on the first attempt at taking each exam. After the data was collected, the student names were replaced by numbers and the corresponding documents connecting the names to the numbers were destroyed. This was done to ensure confidentiality of student information.

Data Analysis Plan

Chi Square was used to analyze the data for significance of relationship. The data was tabulated in a table format with intersecting cells. The cells demonstrated the number of students who failed the Program Specific HESI and also failed the Exit HESI Exam, the number of students who failed the Program Specific HESI but passed the Exit HESI Exam, the number of students who passed the Program Specific HESI but failed the Exit HESI Exam, and the number of students who passed the Program Specific HESI and also passed the Exit HESI Exam. Chi Square was used to determine if any significance to the results of the data existed.

CHAPTER IV

Presentation of the Findings

The PI was able to collect 209 names of the student graduates at a four year Baccalaureate University School of Nursing in Tennessee. Not all data for these students was readily available and the number included was decreased to a convenience sample of 122 students whose scores for both exams were available. The names were changed to numbers to ensure confidentiality for the students. The PI recorded the scores as pass or fail using the pass/fail requirement chosen by the School of Nursing. Because of a change in the HESI score reporting, the first year of score reporting the School of Nursing designated an 80 as passing each of the HESI exams. In the second year of this study, the School of Nursing utilized the score of 800 as passing for each of the HESI exams. During the third year of this study the School of Nursing utilized the score of 800 as passing for the Program Specific HESI and a score of 850 as passing the Exit HESI Exam.

As noted in an earlier chapter, it is not unusual for a School of Nursing to have a "school-set minimum score" on the HESI exam (Spurlock & Hanks, 2004). Nibert, Young & Britt (2003), noted scores ranging between 90 to 99.99 percent were the "predicted to pass" scores designated by HESI but that 36 schools involved in their study of 45 schools utilized a minimum score of 85 as their passing score (Nibert, Young & Britt, 2003, 50S).

It should be stated at this point that each student who was unsuccessful on the Program Specific HESI received remediation until a passing score was achieved. Two different types of remediation were used. In the first year, a 15 hour summer class was

required prior to repeating the exam and progressing onto the senior year curriculum. In subsequent years, a mentor was appointed to each student to assist the student with a self study program of remediation prior to retaking the HESI exam.

Research Question and Hypothesis #1

This question addressed the relationship between student scores on the Program Specific HESI exam and the Exit HESI Exam with the null hypothesis stating there is no significant relationship between program specific HESI scores and Exit HESI Exam scores. To determine the significance of these results, a Chi Square statistical analysis application was used. The data was formulated in a table (see table 1), and the expected frequency for each cell was computed utilizing the on-line Chi Square Calculator (citation) of Prof. Jeff Connor-Linton from the Department of Linguistics in Georgetown University.

Table 1

	PS Pass	PSFail	Total
Exit pass	62	17	79
Exit fail	15	28	43
Total	77	45	122

Degrees of freedom: 1

Chi-square = 22.7337542972515

P is less than or equal to 0.001

Based on these findings the null hypothesis is rejected. A significant relationship is shown between the program specific HESI results and the Exit HESI results. These

results demonstrated that if a student failed the Program Specific HESI on their first attempt, they would have a higher probability of failing the Exit HESI Exam than those who passed the program specific HESI on their first attempt. These results also demonstrated that if a student passed the Program Specific HESI on the first attempt, they were more likely to pass the Exit HESI exam than those who failed.

Research Question and Hypothesis #2

This question addressed the relationship between the student scores on the Program Specific HESI and the scores on the initial NCLEX exam with the null hypothesis stating that there is no significant relationship between exam scores on the Program Specific HESI and the results on the initial NCLEX attempt. To determine the significance of these results, again, a Chi Square statistical analysis application was used. The data was formulated in a table (see table 2), and the expected frequency for each cell was computed utilizing the on-line Chi Square Calculator (citation) of Prof. Jeff Connor-Linton from the Department of Linguistics in Georgetown University.

TABLE 2

	Passed PS HESI	Failed PS HESI	Total
Passed NCLEX	34	16	50
Failed NCLEX	1	4	5
Total	35	20	55

Degrees of freedom: 1

Chi-square = 4.52571428571429

P is less than or equal to 0.05.

The Chi Square calculations demonstrated that this data was significant to a p value less than or equal to 0.05. This data demonstrates that the student who fails the Program Specific HESI is at risk for also failing the NCLEX licensure exam on the first attempt. The data demonstrated that a significant relationship between the Program Specific HESI scores and the NCLEX scores existed, thus the null hypothesis is rejected.

CHAPTER V

Summary and Conclusion

The purpose of this study was to seek information concerning what the results of the Program Specific HESI exam were telling the faculty at a Baccalaureate Nursing program in a University in Tennessee. This School of Nursing had established the requirement that all junior students must take and pass the Program Specific HESI prior to progressing onto the senior curriculum of study. Since the Program Specific HESI is individualized to each School of Nursing, prior studies demonstrating the usefulness of the Program Specific HESI results were not found by this investigator. By completing this study, it is hoped that the faculty at this School of Nursing would have a better understanding of the interpretation of the scores, as demonstrated through a research based study, and be better prepared to make curriculum decisions based on those scores. As well as documenting the strength of the Program Specific HESI in predicting the pass or fail risk for the student taking the HESI Exit Exam, this study also sought to document the significance of the Program Specific HESI in predicting the student's success when taking the NCLEX on the first attempt.

The Chi Square Statistical analysis of the results of this study demonstrated that there is a high level of significance to the data collected for both questions. The faculty at this School of Nursing can feel confident that if a junior student fails the Program Specific HESI, that student will have an increased chance of also failing the Exit HESI Exam and NCLEX Exam with the school's current remediation program

Recommendations

This study lends itself to being repeated. Efforts should be made to repeat this study utilizing more than one School of Nursing Program so that generalizability would be applicable. Additionally, further delineation of the sample into categories of sex, age, race, GPA, repetition of nursing courses, NCLEX results, and repetition of core courses to increase admission GPA would further strengthen this study. Currently, the School of Nursing in this study utilizes a short term remediation plan which ends when the student subsequently passes the failed HESI exam. This researcher feels that further study utilizing a semester or academic year long remediation intervention for students failing the Program Specific HESI exam, may provide further guidance into what type of remediation would be most effective for these students.

The ultimate goal is to find an early identifier of students who are at risk for failing the NCLEX. This study has indicated that the Program Specific HESI exam is statistically significant in identifying the student who will continue to fail this type of exam and the NCLEX. It is, in essence, identifying the "at risk" student. The HESI exams demonstrate critical thinking on the part of the student. Since this study demonstrated to a significant value that a student who fails the Program Specific HESI has a significant risk of also failing the Exit HESI exam, one can infer that these students are weak in their critical thinking ability, and that the short term remediation currently used by this school of nursing, was unsuccessful at inducing a long term improvement of these skills.

This researcher recommends that the School of Nursing in this study re-design their current remediation program to increase the length to a semester long program which can then be studied for potential significance. There are many nursing schools

utilizing the Program Specific HESI exam and further study demonstrating the significance of the results at this level of testing, and the how the various formats of remediation would effect the scores on the HESI Exit exam and/or the NCLEX would be of interest to the student, faculty, school, and the profession.

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APPENDIX A

Institutional Review Board Approval Letter

Austin Peay
State University

College of Graduate Studies

February 14, 2006

Holly J. Gillon
P.O. Box 4658
Clarksville, TN 37044

RE: Your application regarding study number 06-001: A Study To Investigate If A Significant Relationship Exists Between the Health Education Systems Incorporated Exit Exam and/or Program Specific Exam Outcome Scores, And the Baccalaureate Nursing Student's Success In Program Progression and/or Passing the National Council Licensure Exam On the First Attempt

Dear Holly J. Gillon

Thank you for your recent submission. We appreciate your cooperation with the human research review process. I have reviewed your request for expedited approval of the new study listed above. This type of study qualifies for expedited review under FDA and NIH (Office for Protection from Research Risks) regulations.

Congratulations! This is to confirm that I have approved your application through one calendar year. This approval is subject to APSU Policies and Procedures governing human subject research.

You are granted permission to conduct your study as described in your application effective immediately. The study is subject to continuing review on or before February 14, 2007, unless closed before that date. Enclosed please find the forms to report when your study has been completed and the form to request an annual review of a continuing study. Please submit the appropriate form prior to February 14, 2007.

Please note that any changes to the study as approved must be promptly reported and approved. If you have any questions or require further information, contact me at (221-7415; fax 221-7641; email pinderc@apsu.edu). Again, thank you for your cooperation with the APSU IRB and the human research review process. Best wishes for a successful study!

Sincerely,

Charles A. Pinder

Charles A. Pinder, Ph.D.
Chair, Austin Peay Institutional Review Board
cc: Dr. Donald Luck