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AUTHOR Naron, Rosarica G.; Widlak, Frederic
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ABSTRACT

This report addresses the unstable and unsatisfactory performance of Chicago, Illinois' Olive-Harvey College's (OHC) associate degree nursing (ADN) graduates on the National Council Licensure Examination for Registered Nurses (NCLEX-RN). An ex post facto correlation study was designed to determine the worthiness of pre-nursing admission course grades, test scores, support course grades, nursing course grades, and the number of repeated nursing courses as predictive variables for NCLEX-RN performance. Study results revealed that there were significant correlations between the grades in several nursing courses; the score on the OHC comprehensive examination; and number of repeated nursing courses and the NCLEX-RN score. It was determined that nursing students who were experiencing difficulties in passing nursing courses at both levels of the nursing program were likely to fail the NCLEX-RN. Suggestions included: (1) that programs and services such as counseling, individualized academic assistance, and NCLEX review be offered to help the individual student better prepare for the NCLEX-RN examination; and (2) that faculty should reevaluate the program's pre-nursing and support course requirements and be given administrative support in implementing changes. The appendix contains the program guide for the Olive-Harvey College Department of Nursing. Contains 15 references. (GLR)

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RELATICNSHIP OF ACADEMIC VARIABLES TO NATIONAL COUNCIL FOR LICENSURE EXAMINATION FOR REGISTERED NURSE PERFORMANCE OF GRADUATES IN A SELECTED ASSOCIATE DECREE NURSING PROGRAM

Emergence of Higher Education

by

Rosarica G. Naron

Olive-Harvey College

Frederic Widlak, Ph.D.

Chicago Cluster

A Practicum Report presented to No University in partial fulfillment of the requirements for the degree of Doctor of Education

Nova University
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Rosarica G. Naron

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The performance of the Olive-Harvey College (OHC) associate degree nursing (ADN) graduates in the National Council Licensure Examination for Registered Nurses (NCLEX-RN) had been unstable and unsatisfactory over the last five years. This ex post facto correlational study was designed to determine the worthiness of prenursing admission course grades, test scores, support course grades, nursing course grades, and the number of repeated nursing courses as predictive variables for NCLEX-RN performance. This would help to identify those students who are at-risk for failing the NCLEX-RN so that the faculty and administration could provide timely and appropriate assistance.

The data for statistical analysis were obtained from student records of the graduates who took the NCLEX-RN in July, 1988, February, 1989, and July, 1989. The results

showed that there were significant correlations between the grades in English 101, Nursing 101, Nursing 102, Nursing 203, Nursing 211, Nursing 212, Nursing 213; the score in the OHC comprehensive examination; and number of repeated nursing course and the NCLEX-RN score.

Nursing students who were experiencing difficulties in passing nursing courses in both levels of the nursing program were likely to fail the NCLEX-RN. These students could be identified at any time of their matriculation in the nursing program. Programs and services such as counselling, individualized academic assistance and NCLEX review to help the individual student throughout her/his studies as needed should be developed in order to improve NCLEX-RN performance. The nursing faculty should reevaluate the program's prenursing and support course requirements as well as Nursing 210. Administrative support should be given to the nursing faculty in conducting the evaluation studies and in making the changes based on the results of the studies.

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Chapter 1

INTRODUCTION

Background and Significance

Nationwide, prior to the revised Nursing Council Licensure Examination for Registered Nurses (NCLEX-RN) implemented in July, 1988, the pass rate on this nursing licensing examination for registered nurses (RN) was close to 90 percent in the diploma, baccalaureate and associate degree nursing programs. Some nursing schools even had an upper 90 percent successful NCLEX-RN performance. The NCLEX-RN pass rate in July, 1988 declined to 83.6 percent; in February, 1989, it was 81 percent; and in July, 1989, it was 87 percent (Miller, 1990). For some nursing programs, an NCLEX-RN performance below 85 percent threatened the continued operation of their accredited nursing programs (Rayfield, 1988). Passing the NCLEX-RN was an indication to the nursing schools that their graduates have attained the educational objectives necessary to practice safe and effective nursing care at the entry level. The NCLEX-RN content is kept current based on the client health needs, and the nursing process is the framework (Yocom, 1986). This examination is administered twice each year. Most of the graduates take the exam in July following their

graduation; others take the February examination.

Olive-Harvey College (OHC) is a part of the multi-campus community college, the City Colleges of Chicago (CCC), which subscribes to the open-door admission policy . It has a twenty-one year old associate degree nursing (ADN) program that awards an Associate in Applied Sciences (AAS) degree. Candidates for graduation must meet certain requirements set by the College and the nursing program. (See Appendix A.)

The prerequisite courses for admission into the nursing program, Intermediate Algebra or Pharmacology for Nurses, General Biology, and General Chemistry, must be passed with a grade of "C" (2.0) or better. The prenursing grade point average (GPA) must at least be 2.0. Candidates for admission must also obtain predetermined scores set by the nursing faculty : (1) Nelson-Denny reading grade level of 11, (2) Mathematics Placement score of 20, and (3) any test score on the standardized NLN Pre-nursing Admission and Guidance Examination (NLN Aptitude Test).

Also required in the nursing program are satisfactory grades "C" or higher in the support courses, Biology 126 and 127, English 101, English 102 or Speech 101 (to satisfy communication elective course), Microbiology 119 or 233, Psychology 201, and Sociology 201. These courses may be taken prior to admission or upon admission into the nursing program. The nursing faculty felt that obtaining high

grades in the support courses prior to admission into the nursing program could increase the chance of succeeding in the program.

Once admitted into the nursing program, the students must maintain a minimum grade of "C" (2.0), equivalent to the percentile grades between 77 and 84, in all of the nursing courses. First-year nursing students must obtain a minimum score of 80 percent in the Pharmacology-Mathematics proficiency examination in order to continue to the second year of the nursing program. Students who are not able to maintain the "C" grade in any of the nursing coures are allowed to repeat the course once. Failure to pass the repeated course results in the permanent withdrawal from the nursing program. Some students were able to repeat the nursing course more than once due to an inadvertent error in implementing the nursing modular curriculum in 1985. A random review of student records showed that majority of those graduates who repeated one or more nursing courses failed in the NCLEX-RN.

An additional graduation requirement, passing a CCC nursing faculty-constructed comprehensive examination was instituted in 1983 as dictated by CCC administration. This mandate was an immediate response to the warning by the state's accrediting board of nursing programs, the Illinois Department of Registration and Education, concerning the poor NCLEX-RN performance of four of the five CCC-operated

nursing programs. A 75 percent NCLEX-RN pass rate must be maintained in order to avoid probationary status of the program. The performance of the OHC nursing graduates on the NCLEX-RN has been fluctuating for the last seven years, and as a whole has been unsatisfactory.

Relationship to Emergence of Higher Education Seminar

Since its inception in the 1950's, the ADN programs have been affiliated in institutions of higher education. The programs are based on a foundation of liberal arts and sciences, and on nursing knowledge, which are the core courses for a degree from institutions of higher learning, similar to baccalaureate degree nursing programs (Primm, 1986).

The recognition of the ADN programs in higher education have been largely influenced by social, economic, and political forces. Advanced technology in the health field, demand for additional nursing care providers in an increasingly complex health care organization, and cost containment in educating immediately needed nurses after World War 11 were among the principal incentives for the emergence of the ADN programs in institutions of higher learning.

Likewise, the NCLEX-RN was another factor external to nursing education and actually influencing higher education-affiliated ADN and baccalaureate nursing programs by

administering one type of examination for all types of nursing programs. Developed by an independent body, the National Council for State Board for Nurses (NCSBN), the content of the NCLEX-RN examination were updated skills and knowledge necessary to practice nursing. Passing the NCLEX-RN is a legal validation that society is assured of competent nurses at the entry level. Related to this examination and the education of nurses is the quest for professional status of nursing, an ensuing controversy up to the present time.

Statement of the Problem

Since the first NCLEX-RN in February, 1983, the performance of the OHC nursing graduates has been unstable. The average of the NCLEX-RN results fluctuated from a high 90 percent to a low 51 percent pass rate. The last four NCLEX-RN results averaged an unsatisfactory 70.3 percent. The two most recent February NCLEX-RN averaged 51 percent which were much lower than the July results which averaged 83 percent. February NCLEX-RN results of mostly graduates who have repeated nursing courses have been consistently unsatisfactory. This trend is particularly unfavorable for the nursing program that had tried to upgrade its curriculum and student support facilities in order to graduate students who would pass the NCLEX-RN examination and become licensed nurses who would provide the nursing services in their own

community in the presence of a nursing shortage.

Statement of Purpose

The purposes of the study were: (1) to determine the relationship of admission criteria, support courses, performance in the integrated nursing courses, and other academic performances required in the nursing program as predictive variables for the NCLEX-RN performance, and (2) to identify the sets of variables predictive of passing the NCLEX-RN examination. Results would be used to identify the student-at-risk for failing the NCLEX-RN.

Research Hypotheses

The following hypotheses were formulated for this investigation:

1. There is a significant relationship between the admission criteria variables (National League for Nursing Prenursing-RN Admission and Guidance Examination, Intermediate Algebra or Pharmacology 103, Chemistry 100/121 or 201, Mathematics Placement score, Nelson-Denny Reading score), and the NCLEX-RN score.

2. There is a significant relationship between the nursing course grades (Nursing 101, Nursing 102, Nursing 210, Nursing 211, Nursing 212, Nursing 213, and Nursing 203), Pharmacology Proficiency test grade) and the NCLEX-RN score.

3. There is a significant relationship between the support course grades (Microbiology 119 or 233, Biology 126 and 127, English 101, English 102 or Speech 101, Psychology 201, and Sociology 201) and the NCLEX-RN score.

4. There is a significant relationship between the OHC administered NLN Comprehensive examination score, the number of repeat nursing courses and the NCLEX-RN score.

Chapter 2

REVIEW OF THE LITERATURE

The literature review for this study included: (1) the NCLEX-RN as the dependent variable in predicting what variables affect passing or failing this nursing licensing examination, (2) the nature, content, and the framework of the NCLEX-RN, (3) predictive studies of success in the nursing programs, and (4) support programs for at-risk students for failure in the NCLEX-RN. Literature on higher education and in nursing education in regard to minorities, changing student demographics, declining pool of entering college students, retention and success, accountability, quality of professional education, and limited school budget were also reviewed.

The findings of the 1984 NLN Annual Survey of RN Programs, according to Rosenfield (1986:327) shows that "nursing education is now well-established in higher education community" as evidenced by 82 percent of the basic nursing programs affiliated with community colleges, four-year colleges, and universities. Enrollment in the ADN programs of the community colleges was the most progressive since this two-year program was implemented in the 1950's to deal with the nursing shortage after World War II (Karrer, 1988). Affiliation with higher education institutions of

the ADN programs raised new problems related to the educational preparation of the professional nurse and the quality of graduates needed to meet the increasingly complex nursing care in today's health care system within the nursing community. In addressing this problematic issue, Rosenfield (1986:329) recommends that

> Contemporary nursing education must handle the internal professional demands of increased credentialing and the image of the nurse while dealing with the challenges posed by the external development such as the health care budget crunch, demographic shifts, and changes in higher education.

This same study also identifies the problems of falling enrollments, increasing attrition due to difficulty in the nursing courses, decreasing proportions of minority enrollment, and nursing shortage. Felton (1988) adds that the lack of monetary compensation for the increasingly complex nursing tasks, low image of the nursing profession, high technology nursing skills, and the emergence of the new elderly clientele demanding specialty care complicate the education of the nurse to meet current and future market demands. Felton (1986:213) advocates that the primary objective of the nursing curriculum for the future is not only to prepare "competent people to enter the profession or to specialize", but also to "prepare leaders in nursing practice and the public health enterprise more broadly." On the other hand, the NCLEX-RN objective is testing the skills of the graduate for beginning entry to nursing practice.

This licensure examination which was in place in February, 1983--replacing the State Board Test Pool Examination (SBTPE), is periodically updated to reflect nursing practices of newly-licensed nurses in the delivery of health care through a job analysis study. One such study was completed in June, 1986 which served as the basis for the revised July, 1988 NCLEX-RN examination. The proportionate distribution of test items are based on the type and frequency of the nursing tasks. The multitude of schools of nursing have various curriculum models to approach this NCLEX-RN content and nursing process framework, using different strategies to help their graduates to pass this licensing examination. Nursing education and the NCLEX-RN examination have the common objective of insuring the consumers (society) of quality nursing services (Yocom, 1987).

Due to the critical importance of the NCLEX-RN examination for graduates who have chosen nursing as a career, several investigations have been conducted since the first NCLEX-RN in 1983 to determine predictive variables for success or failure in the NCLEX-RN. One of these earlier studies, Felts (1986) shows that the ACT composite score is the best admission criterion predictor for success in the nursing courses; while the support courses GPA, and Microbiology course grades are the best college variable predictors. Furthermore, the grades in college courses

predict performance in the NCLEX-RN with greater accuracy than do grades in high school. Grades in the biological sciences, social sciences, humanities, and cumulative GPA classify those who will pass and fail the NCLEX. The predictive ability of the previous college course grades reaffirms a previous conclusion of Grant (1983), after reviewing studies on this subject for more than a decade, that "future success is best predicted by past successes" (Felts, 1986:376). Other researches on predictive variables that correlate with NCLEX-RN performance found the following to be significant: GPA at the end of the freshman year, SAT math and verbal scores, Anatomy and Physiology (Biology) grade, comprehensive examination score towards the end of the program, over-all GPA, nursing grades, and nursing GPA (Duffy and Payne,1986); SAT score, prenursing GPA, repeat courses, Mosby Assess test score, and cumulative nursing GPA (Coonrood, et al. (1988). In a review by Coonrood, et al. (1988) of the 1984 study of Barrell, Melcolm, and Wenn, the best predictors in the integrated nursing curricula for both the ADN and baccalaureate degree nursing programs for the NCLEX-RN were the NLN scores, cumulative GPA, and clinical GPA.

In contrast, a study of a generic nursing program that has been experiencing low NCLEX performance (Chadwick and Whitley, 1986) found that graduates admitted with low SAT scores, low cumulative GPA, and low science GPA, who also

scored below the class mean while in the nursing program were at-high risk for failing the NCLEX.

Taube and Woodham (1986) in a study of a historically successful ADN program with consistently high NCLEX-RN pass rate found a positive correlation between nursing grades and SAT scores. It is noteworthy that the majority of this student population has comprised of non-traditional adult learners, with dependents, and working parents. Taube and Woodham (1986:116-117) attributes the NCLEX-RN success of the graduates to:

> outstanding faculty credentials who have extensive clinical practice in their area of expertise, continued review, evaluation, refinement of the curriculum, and integration of the problem-solving approach (nursing process). . . . additional influence on the successful NCLEX performance is the Board review program for each graduating class selected by the graduates themselves.

The nursing faculty plays a significant role in preparing the students for the NCLEX-RN. Felts (1986:372) emphasizes the obligation of the nursing faculty to examine their curricula periodically in order to identify the "factors most predictive of the student's ultimate success in their profession." This same study reminds the nursing educators of the revised NCLEX-RN format that includes the nursing process behaviors which essentially focus on a problem-solving approach applied to current nursing practice.

Other programs of activities were included in the nursing curricula in some shools of nursing to improve the performance of the students for the NCLEX-RN. The target

population of the GAIN project in the University of Southwestern Louisiana (USL) nursing program were the "educationally, socio-culturally and financially disadvantaged" high school students who have the potential of becoming nurses (Des Ormeaux, 1990:412). Implementing a multidimensional approach of assisting these students from the time of their admission to their completion of the program which included cognitive development, identifying at-risk students in each identified area of difficulty systematically, requiring twelfth grade reading level, providing stipends, and individualized counseling has produced success. Each group of disadvantaged students progressed sufficiently to successfully complete the nursing program. Results in the NCLEX-RN over a five year period was a high 90 percent average pass rate and 100 percent since then (Des Ormeaux, 1990). A similar multifaceted approach to promote "academic progression, successful completion in the baccalaureate nuring program, and subsequent passage of the NCLEX for licensure" of those having academic difficulties was undertaken at Clemson University with the creation of the Nursing Resource Center (Hughes, 1988:289). Specific services such as individualized advisement and counseling, tutoring, referrals and NCLEX review sessions for the graduating class conducted by the faculty members with the use of the computerized NURSESTAR review for the NCLEX were provided. Success in

the NCLEX-RN was evident for the graduates who participated in all the sessions of this special program (Hughes, 1988). Special approaches in conducting reviews to prepare the students for the NCLEX-RN that include not only the content reviews but the test-taking strategies as well, were found to be very effective for success in the NCLEX-RN (Angel, et al., 1990; Baradell, et al., 1987).

Given the unique circumstances of a nursing program, studies on predictive variables on the NCLEX performance could be conducted to help graduates improve their NCLEX performance. Many of the predictive variables vary from institution to institution; however, several college course grade variables, especially the nursing course grades, were consistently identified as influencing success or failure in the NCLEX-RN. For the students who are identified at-risk for NCLEX-RN failure at any point of the nursing program, various programs and student support services can be developed and utilized to assist them improve their preparation to pass the NCLEX-RN.

Nursing educators realize that the external influence of the NCLEX-RN greatly impacts their revision of the curriculum objectives, and that teaching this content is essential if the nursing graduates are to be prepared for current competent nursing practice in a complex health delivery system.

Chapter 3

PROCEDURES

Procedures for Collection of Data

An ex post facto correlational study was conducted to test the hypotheses. The sample for this study was the OHC nursing graduates who took the NCLEX-RN during the July, 1988, February, 1989, and July, 1989 schedules was conducted. The dependent variable was the NCLEX score (NCLEXSC) which was reported as "pass" or "fail." All the required courses and other academic requirements in order to graduate and be eligible for the NCLEX-RN were the independent variables included in this study. These twenty-three independent variables were: NLN Aptitude test composite score (NLNAPTSC), Nelson-Denny Reading score (NDREADSC), grades in Mathematics 110 or Pharmacology 103 or equivalent course (MATHPRE), Mathematics Placement score (MATHPLSC), Chemistry 100/121 or 201 (CHEMIST), Sociology 201 or its equivalent course (SOCIOL), Psychology 201 or its equivalent course (PSYCHOL), English 101 (ENGL101), English 102, Speech or its equivalent (COMMUN), Biology 111, higher level Biology (BIOLPRE), Biolgy 126 (BIOL126), Biology 127 (BIOL127), Microbiolgy 119 (MICROB), Pharmacology Proficiency Examination (PHARMEX), OHC Comprehensive Examnination

(OHEXAM), Nursing 101 (NURS101), Nursing 102 (NURS102), Nursing 210 (NURS210), Nursing 211 (NURS211), Nursing 212 (NURS212), Nursing 213 (NURS213), Nursing 203 (NURS203), and Repeated Nursing Courses (NREPEAT). As a retrospective study, the variables were limited to the data available in existing student records.

The three official reports prepared by Continental Testing Services, Inc. and sent to the Nursing Department by the Illinois nursing licensing agency, the Department of Registration and Education were accessed. It contained the scores of the OHC nursing graduates who took the NCLEX-RN examination in July, 1988, February, 1989, and July, 1989

To collect the data, student records filed in the Department of Nursing were accessed using the list of examinees who took the three examinations. Some of the grades that were missing from the student records were obtained from the Registrar's Office. As suggested by the nursing faculty, the grades reported in percentages were the ones used for the study. The information in regard to age, race, and sex were also obtained. Proper coding of the selected variables was done for statistical calculations.

Permission to access student records were obtained from the chairperson and from the registrar. Confidentiality of gathered data was maintained.

Procedures for Treatment of Data

A simple regression analysis using the regression subprogram of the Statistical Package for Social Sciences

Procedures for Treatment of Data

A simple regression analysis using the regression subprogram of the Statistical Package for Social Sciences (SPSS) was used to determine if NCLEX scores could be predicted by any one or combination of the independent variables. The distribution of the age, gender and racial characteristics was included in the description of the subjects. For those courses taken twice, the average grade was calculated and used for statistical computation.

The frequency distributions as well as the means and standard deviations were calculated for the independent variables and the criterion variable.

Definition of Terms

Operational definitions for this study were as follows:

Equivalent Course: A course taken in other schools or at OHC comparable to the admission or graduation requirement of the nursing program.

Nursing Performance: This comprises the seven nursing course grades with first year course grades (Nursing 101, Nursing 102), and the second year grades (Nursing 203, 210, 211, 212, 213), and also the scores in the Pharmacology Proficency Exam and the OHC comprehensive exam.

NLN Aptitude Test: This is also known as the standardized NLN Prenursing Admission and Guidance Examination and is a mandatory exam for students applying in

this nursing program. It has a verbal usage, science, and mathematics components.

Support Course Grades: All the other course grades for continuing to the second year of nursing, and for graduating with an associate degree in Applied Sciences (AAS).

Assumptions and Limitations

It was assumed that the student records were accurate and were available for this study. It was also assumed that the NCLEX-RN examination was a reliable and valid examination.

Only those NCLEX-RN scores reported to the OHC nursing office was considered for the study. Nursing graduates who did not provide a written release of their grades to OHC were not included in the study.

The homogenous ethnic minority sample and their unique characteristics limited general applicability of the results of the study. Due to a lack of uniformity in grading clinical performance of the students, this grade was not included in the study. The differences in grading procedures of other schools where the transfer student records were obtained led to the decision of not including their grades in the study.

Chapter 4

RESULTS

Characteristics of Subjects

The 73 OHC graduates who took the NCLEX-RN on July, 1988, February, 1989, and July, 1989 were included in this study. In this sample, 69 were African-Americans; 2 Haitians, 1 Caucasian, and 1 Hispanic. Their ages ranged from twenty-four to thirty-eight years old. Three were males.

The number of subjects who took the NCLEX-RN and the schedules when they took it were : 31 in July, 1988; 17 in February, 1989; and 25 in July, 1990. There were 57 (78.1%) who passed the NCLEX-RN and 16 (21.9%) who failed.

Table 1 shows the descriptive statistics results of the multiple regression analysis statistical test.

Table 1

Descriptive Statistics of Predictor Variables

Variable	Mean	Standard Deviation	Minimum	Maximum	N
NLN Aptitude Score	43.97	22.99	9	92	73
Nelson-Denny Reading	13.00	1.24	10.4	15.0	68
Math Placement Score	26.09	4.70	14	35	65
Math Prerequisite	2.99	0.89	0	4	73
Chemistry 100/121/201	2.67	0.77	1	4	73
Sociology 201	2.74	0.85	0	4	69
Psychology 201	2.64	0.94	0	4	72
English 101	2.92	0.85	1	4	72
English 102/Speech 102	2.87	0.93	0	4	67
Biology 111 or higher	2.69	0.87	0	4	71
Biology 126	2.63	0.77	0	4	73
Biology 127	2.65	0.79	0	4	73
Microbiology 119	2.68	1.00	0	4	72
Pharmacology Exam	0.74	0.44	0	1	68
Comprehensive Exam	189.48	22.56	150	237	73
Nursing 101	81.45	6.43	68	95	62
Nursing 102	80.80	5.75	66	93	69
Nursing 210	79.47	4.68	67	89	73
Nursing 211	79.63	3.41	70	89	73
Nursing 212	81.19	3.94	69	90	73

Table 2 shows the variables, English 101, comprehensive examination, Nursing 101, Nursing 102, Nursing 211, Nursing 212, Nursing 213, Nursing 203, and repeated nursing course were related to NCLEX score at $p \leq 0.05$ level of significance. The only nursing course variable, Nursing 210 course grade was not significantly related to the NCLEX-RN score (NCLEXSC). Variables associated with admission and support course grades and scores except for English 101 grade were not significant.

Table 2

Correlation Analysis of NCLEX SCORES and Variables

Variables	Correlation Coefficients	Cases	Two-tailed Significance
NLN Aptitude Score	.0516	73	P= .665
Nelson-Denny Reading	.1196	68	P= .331
Math Placement Score	-.0808	65	P= .522
Math Prerequisite	-.0079	71	P= .948
Chemistry 100/121/201	.0461	71	P= .702
Sociology 201	.1283	69	P= .293
Psychology 201	-.0279	72	P= .816
English 101	.3423	72	P= .003
English 102/Speech 102	.1595	67	P= .197
Biology 111 or higher	.0795	71	P= .510
Biology 126	.0467	73	P= .695
Biology 127	.1467	72	P= .219
Microbiology 119	.0757	72	P= .527
Pharmacology Exam	.1321	68	P= .283
Comprehensive Exam	.2906	73	P= .013
Nursing 101	.5341	62	P= .000
Nursing 102	.3369	69	P= .002
Nursing 210	.1814	73	P= .125
Nursing 211	.323	73	P= .005
Nursing 212	.3137	73	P= .007
Nursing 213	.4650	73	P= .000
Nursing 203	.2814	73	P= .016
Repeated Nursing Course	.3521	73	P= .002

Chapter 5

DISCUSSION, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

Discussion

The academic variables that were significantly related to the NCLEX-RN performance were identified in this investigation. The significant correlations of seven out of the eight nursing course grades (Nursing 101, Nursing 102, Nursing 210, Nursing 211, Nursing 212, Nursing 213, and Nursing 203). The NCLEX score seemed to validate the nursing content implemented in the OHC nursing curriculum. The use of the nursing process framework and the focus of the nursing faculty to the updated content of the NCLEX-RN supported the 1986 study of Taube and Woodham.

It would seem that the lack of significant correlation of the nursing course grade in Nursing 210 with the NCLEX-RN performance maybe attributed to the lack of congruence of the course objectives and content to the nursing process format of the revised NCLEX-RN. The nursing faculty responsible for teaching the Nursing 102 course needs to identify the factors that influence the course grade and are most predictive of students' NCLEX-RN performance.

Students who were matriculated in the nursing program and who have failing grades in the nursing courses at any point of their nursing studies were most likely to have difficulty passing the NCLEX-RN. It seemed that this behavior would likely occur repeatedly if not remediated soon enough to reverse it to a successful behavior. This was supported by an observation of a 1983 Grant study by Felt (1986:376) that "future success is best predicted by past successes." The lack of significant correlation of the support courses and the prerequisite nursing course grades to the NCLEX-RN performance was contrary to many findings that college course variables are the best predictors for academic successs as well as for the NCLEX-RN (Coonrood, et al., 1988; Duffy and Payne, 1986; Chadwick and Whitley, 1986). These courses have been taken as higher education courses and are also considered essential for professional nursing practice. However, in the midst of the continuing controversy in regard to educational preparation of the professional nurse, this factor could be contributing to the poor performance in the NCLEX-RN.

Conclusions

There were specific academic variables, mainly the nursing course grades, repeated nursing courses, and the test scores that the nursing students obtained while enrolled in the two-year ADN program that were significant

in predicting the likelihood of passing or failing in the NCLEX-RN. Students who repeated one or more nursing courses were high risks for failing the NCLEX-RN. Thus, these nursing students who are having difficulties in the nursing courses could be given academic and personal assistance to improve their chances to pass the NCLEX-RN. The relevance of the prenursing admission prerequisites, grading policies, graduation requirements, support courses, and Nursing 210 needed reevaluation.

Implications

Identification of the predictive variables related to the success or failure in the NCLEX-RN could provide the basis for the college administration and the nursing faculty to work cooperatively to help in a timely and appropriate manner those nursing students who are having academic difficulties. Students who are at-risk of failing the NCLEX-RN could be identified early in the program and provided with the corresponding services, advisement, and counseling, as soon as possible. Given the appropriate and adequate academic and personal assistance, at-risk students would be better prepared for the NCLEX-RN examinations.

Recommendations

The appropriate assistance such as individualized instructional help and counseling should be provided to the

students who are identified to be at-risk for failure in the NCLEX-RN. The academic assistance combined with counseling should be provided as early as their first year in the nursing program and should continue throughout their nursing studies. Close monitoring of their academic performance while the academic assistance is being given should be undertaken.

The nursing faculty should evaluate Nursing 210 in regard to its instructional, and grading methodologies. Furthermore, they should conduct a reevaluation of its prenursing prerequsites, graduation requirements, and support courses. Administration could provide the necessary support and incentives for the nursing faculty to conduct the studies and implement changes based on the studies.

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APPENDIX A

OHC NURSING PROGRAM GUIDE

Olive-Harvey College
Department of Nursing

Program Guide

To Be Eligible For The Registered Nurse Examination

PRE-NURSING REQUIREMENTS AND COURSES TO BE COMPLETED FOR THE NURSING PROGRAM.

1. The following requirements must be met before consideration is given for admission to the Nursing Program.

   A. Must be a high school graduate or have earned a GED Certificate.

   B. The following three (3) Pre-requisites must be taken and passed with a grade of "C" or better prior to admission into the Nursing Program.

      a. Biology 111 or a higher level Biology

      b. Chemistry 100/121 or a higher level Chemistry

      c. Math 110 or a higher level Math or Pharmacology 103

   Note: If in high school you earn a grade of "C" or better for one year of Algebra or for one year of Chemistry within the last five (5) years, you may be exempted only after official verification of your high school transcript by the Nursing Department. However, it would be to your advantage to review and update your knowledge by taking the College Math and College Chemistry course.

   C. In addition to the above (3) prerequisite courses, the following must be completed and on file by March 1st of year student is seeking admission.

      1. Results of National League for Nursing (NLN) Aptitude Tests. (Application may be obtained in Pre-Nursing Advisement Office: Room 3119, 568-3700, Ext. 495.

      2. Results of Nelson-Denny Reading Test (11th grade minimal level)

      3. Results of Math Placement Test

      4. Official copy of high school record or GED Certificate

      5. Official copy of applicable credits earned at other institutions

      6. Application to nursing program -- (filing of application does not assure acceptance)

   D. To be considered for admission to the Nursing Program, a student must have an overall GPA of 2.0 or above.

2. Students who score highest and who have completed all requirements listed will be considered for admissions.

   A. Students are strongly encouraged to submit all records as soon as possible to be considered for early admission

   B. Students should contact pre-nursing advisor to verify that records have been received

   C. Students who are accepted into the nursing program will receive written notification

   D. Final admission is determined by nursing admissions committee with approval of Olive-Harvey College Administration

3. Credit by Examination: Student who have been admitted and who are also LPN's may be exempted from Nursing 101 by passing a "Proficiency Exam".

4. Scholarships, grants, etc: Students are referred to the Office of Financial Aid.

5. Courses Required to Complete Program: The following courses are required to complete the nursing program. These courses may be completed prior to official admission to the nursing program.

Required	*Electives	**Electives (Choose One)
English 101	Speech 101	Chemistry 101/121
Biology 126	English 102	Math 110 or higher
Biology 127		Pharmacology 103
Microbiology 119	(must take one	Biology 111
or 233	of the above)	Business 111
Psychology 201		Child Development 101/111
Sociology 201		Economics 133, 201
		Social Science 101
		Psychology 207

6. Nursing Courses

After admission to the nursing program, two years are required to complete the nursing courses and earn the Associate in Applied Science Degree (AAS).

Semester	Course	Cr.hrs.	Prerequisites
1st Year			
Fall Semester	Nursing 101	7	Admission to Nursing Program
Spring Semester	Nursing 102	7	Biology 126, Nursing 101
2nd Year			
Fall & Spring Semesters	Nursing 210, 211, 212, 213	6 each	Biology 127, Nursing 102 Microbiology 119 or 233
	Nursing 203 (Spring Semester)	3	

7. Sample of 2 Year - Nursing Curriculum

First Year - Fall Semester	Cr.Hrs.	Spring Semester	Cr.Hrs.
*Nursing 101	7	*Nursing 102	7
Biology 126	4	Biology 127	4
English 101	3	Microbiology 119 or 233	3-4
		*Communication Skills Course	3
Second Year - *Nursing 210	6	*Nursing 211	6
*Nursing 212	6	*Nursing 213	6
Psychology 201	3	Nursing 203	3
Sociology 201	3	**Elective	3

*Note: 1. Student must demonstrate Math Competency in the calculation of drug dosages and solutions prior to completion of each nursing course.

2. Note: 2nd level nursing courses are not sequential (no particular order). Students may register for 1 or 2 courses which are offered in 8 week segments.

8. Other Requirements for Graduation

A. Must earn a total of 68 credit hours with an over-all GPA of 2.0 and "C" or better in each nursing course.

B. Pass the Constitution Exam or Political Science 201 course.

C. Transfer students must fulfill a residency requirement: enrolled at least 1 full-year in the Olive-Harvey College Nursing Program.

D. Must pass a written Comprehensive Examination. The examination is taken following successful completion of all requirements for Associate in Applied Science Degree (AAS) in Nursing.

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