Title:
Logistic Regression of Admissions Data to Identify Predictors of Success in a BSN Program

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Session Title:
Challenges for Student Success
Slot:
L 05: Monday, 19 September 2016: 1:30 PM-2:15 PM
Scheduled Time:
1:30 PM

Purpose:
To determine which factors best predict success of BSN students, using data from 341 students over a 3 year period. Success was defined as passing all nursing courses on the first attempt, on time program completion, and passing the NCLEX on the first attempt.

Keywords:
Admission Criteria, BSN Student Success and Retention

References:

Abstract Summary:
Retrospective analysis demonstrated that use of this model would have eliminated 38.75% of the students who were ultimately not successful in the nursing program, while only eliminating 19% of the students who were ultimately successful.

Learning Activity:

<table>
<thead>
<tr>
<th>LEARNING OBJECTIVES</th>
<th>EXPANDED CONTENT OUTLINE</th>
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<tr>
<td>The learner will be able to identify admissions criteria most predictive of success in a BSN program.</td>
<td>Overall GPA at the time of application to the nursing program, Science GPA, HESI Entrance Exam Score, and sores for the HESI Anatomy and Physiology (A&amp;P), Math, and Reading subscales. Logistic regression for predication of the probably of success found the following three variables accounted for 76% of the variance. Admission GPA, Science GPA, Scores on the HESI A&amp;P subscale.</td>
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<td>The learner will understand the effects of the admissions formula applied to 6 cohorts of incoming BSN students.</td>
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Abstract Text:

Logistic Regression of Admissions data to Identify Predictors of Success in a BSN Program

Attrition is a serious issue among Bachelor of Science in Nursing (BSN) students, with attrition rates around 50% nationwide (Newton 2009). Once a student is admitted to a nursing program they essentially are taking a space, which cannot be filled later by another student, as all students must start at the beginning of the program. Loss of a student part way through the nursing program or through NCLEX failure causes inefficacy in the production of BSN graduates for the workforce. The goal of this study was to determine which factors best predict success of students in a generic BSN program, using data from 341 students over a 3 year period. Student success was defined as passing all nursing courses on the first attempt with a grade of C or above, on time program completion, and passing the NCLEX on the first attempt. For this group, 229 students were successful and 112 were non-successful in some way. Pre-admission variables used: Overall GPA at the time of application to the nursing program, Science GPA, HESI Entrance Exam Score, and scores for the HESI Anatomy and Physiology (A&P), Math, and Reading subscales. Logistic regression for predication of the probably of success found the following three variables accounted for 76% of the variance: Admission GPA, Science GPA, Scores on the HESI A&P subscale. This formula was validated by using a retrospective analysis of the admissions groups, to determine what the effect of using this model would have been if it had been used at the time they applied to the program. Using the formula of GPA+ Science GPA+ (HESI A&P/10) = admission score, 341 students (6 cohorts) were ranked and the top students were identified. The outcomes of students identified by this model were determined and each was listed as successful or non-successful based on their actual performance in the BSN program. Retrospective analysis demonstrated that use of this model would have eliminated 38.75% of the students who were ultimately not successful in the nursing program, while only eliminating 19% of the students who were ultimately successful. This model produced better results than any of the other models tested in this study, including using a variety of admissions variables such as interviews, references, reading scores, GPA alone, and cut off scores for the HESI entrance exam.