



OAKLAND
COMMUNITY
COLLEGE

**Pre-Nursing Assessment Test
Evaluation**

Requested by:

*Nursing Faculty
Highland Lakes Campus*

Prepared by:

*Office of Institutional Research
April 1999*

Executive Summary:

Purpose of Project:

- To examine the correlation between first semester grades of currently admitted nursing students and their scores on the *Pre-Nursing Assessment Test* offered by C-NET in order to determine if the test should be adopted as part of the student selection process.

Background:

- The test was initially developed by surveying schools of nursing to determine the competencies expected or required for admission to their programs.
- A *Basic Test* of language and numerical ability was developed as well as an optional *Science Test*. Particular care was used to select test items that closely mirrored the kinds of information required in nursing practice. For example, the science questions rely more heavily on biology topics rather than chemistry or physics.
- Seventy-nine nursing programs in 29 states (N = 3041) participated in the 1995 pilot study that determined the selection of items for the final test. The test was administered and students who participated also gave permission for their current GPA to be released to C-NET.
- Usable returns were received from 56 nursing programs in 23 states. Fourteen were diploma programs and 42 were associate degree programs.
- The final number of students in the validation study was 2046 and the data were analyzed utilizing the SPSS statistical package.

Results of C-NET validation Study:

- Several factors must be kept in mind when considering the correlations found in the validation study. First, there were variations across the different programs with regard to length of program, grading methods, number of students and range of student GPA's. Second, and perhaps more directly related to the correlations attained, is the effect of restricted range. Thus, the full range of ability level is not actually available since only admitted students took the test. Those not admitted would be expected to score lower on the test and have lower GPA's than admitted students. Both of these concerns could have served to lower the attained correlations.
- There were differences among the schools as to which subscore of the PNAT-RN had the

highest correlation with GPA. For 21 schools (37%) it was the Language ability subscore. For 18 schools (32%) it was the Numerical ability subscore and for 14 schools (25%) the Science subscore correlated most highly with student GPA. For the remaining three schools, some combination of subscores correlated most highly with student GPA.

- When mean correlations (across schools) were considered, the highest mean correlation was between the total test score and GPA with $r = .57$; a moderate correlation. A complete list of all correlations found in the validation study along with those of current OCC nursing students is included in this report.

Results of first semester OCC Nursing students grades and test results:

- Data was analyzed from 185 currently enrolled (Winter 1999) OCC nursing students. Seven students who did not complete the test were dropped from the analysis. Data included test results from the PNAT - RN test (language, numerical, and science subscores and the total test score) along with course grades from NUR 141 (Foundations of Nursing) and NUR 129 (Pharmacology).
- When Students are divided into two groups based on their Total test score on the PNAT - RN (at or above the 50th percentile vs below the 50th percentile), those scoring at or above the 50th percentile have significantly higher GPA's in both courses than those scoring below the 50th percentile. Information on grades can be found on page 6 of this report.
- Two points should be kept in mind when comparing OCC data to the Validation Study data.
 - OCC correlations are based on one semester while the validation study data is based on students who have successfully completed one year of their nursing program.
 - Not all of the schools included in the validation study were community colleges and therefore comparisons should be made with that in mind.
 - There is no way to ascertain what the student selection criteria was for the other nursing programs.

Summary:

- Although the magnitude of the OCC correlations that concern GPA are not as great as those found in the validation study, they are all significant at the $p < .001$ level. The trends in the OCC data do not appear, thus far, to differ in any important ways from those found in the validation study.

- It is suggested that a GPA that is based on one completed year of study be used to recalculate the correlations of interest in order to be more analogous to those presented in the validation study.
- If the department decides to adopt the PNAT - RN test as part of the selection process, it seems reasonable to set a cut-off between the 40th to 60th percentiles as recommended by C-NET. A more specific cut-off would depend on factors such as the difficulty of OCC's program compared to others, the caliber of applicants, and the number of applicants compared to the number of available spots.
- An alternative to using the test as part of a selection process might be to use it to indicate areas of student's strengths and weaknesses. In this way, students could be encouraged to seek remediation either prior to admission or early in their training.

Correlations Among Student GPA and the PNAT - RN Test

| | Validation Study (N = 2046) | OCC Program (N = 185) |
|---|-----------------------------|-----------------------|
| GPA ¹ and Score of Total Test ² | .57 | .28 |
| GPA and Language | .48 | .29 |
| GPA and Numerical | .41 | .20 |
| GPA and Science | .44 | .22 |
| | | |
| Language and Total Test | .84 | .86 |
| Numerical and Total Test | .71 | .78 |
| Science and Total Test | .77 | .86 |
| | | |
| Numerical and Science | .36 | .53 |
| Language and Numerical | .38 | .50 |
| Language and Science | .46 | .60 |

¹ GPA for the Validation study is based on one completed year of a nursing program while GPA for OCC is based on the completion of 2 courses.

² Total Test refers to the Language, Numerical, and Science portions combined.

**Means of the GPA, Subscores, and Total Test for
Validation Study and OCC Program Participants**

| | Validation Study | OCC Program |
|--------------------|-------------------------|--------------------|
| Average GPA | 2.8 | 3.1 (.86) |
| | | |
| Language | 53.1 (7.8) | 50.7 (9.7) |
| Numerical | 35.9 (6.1) | 30.2 (7.9) |
| Science | 54.7 (7.6) | 53.6 (9.3) |
| | | |
| Total Test | 141.2 (20.6) | 134.5 (22.5) |

NOTE: Standard deviations are shown in parentheses.

OCC Nursing Students Grades

| Course | Students below the 50th percentile on the PNAT - RN Total test | Students at or above the 50th percentile on the PNAT - RN Total test |
|--------------------|--|---|
| NUR 129 GPA | 3.0 (.76) | 3.60 (.51) |
| NUR 141 GPA | 2.5 (.95) | 3.28 (.43) |
| Overall GPA | 2.71 (.72) | 3.44 (.42) |
| | n = 118 | n = 67 |