

COURSE VALIDATION STUDY

Target Course: VN 101 Self-Care Fundamentals and Pharmacology
Prerequisite: READ 097

The following is statistical data on the validation of the following course prerequisite:
Successful completion of READ 097 as a prerequisite for VN 101.

VN101 Success Recode * READ097 Success Recode Crosstabulation

Count

		READ097 Success		Total
		NO	YES	
VN101 Success	NO	12	3	15
	YES	25	0	25
Total		37	3	40

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.405(b)	1	.020		
Continuity Correction(a)	2.907	1	.088		
Likelihood Ratio	6.299	1	.012		
Fisher's Exact Test				.046	.046
Linear-by-Linear Association	5.270	1	.022		
N of Valid Cases	40				

a Computed only for a 2x2 table

b 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.13.

Chi-Square Measurement:

The *Chi-Square* measurement tests the hypothesis (*null hypothesis*) that there is “*no difference*” between the two groups. In order to reject this hypothesis and conclude that there is a statistically significant difference between the two groups Chi-Square must be greater than **3.84**. To ensure the validity of the Chi-Square test there is a minimum frequency threshold for a 2x2 table that should be obeyed. If any of the observed frequencies in the cross-tabulation table are **5 or below** than the validity of the Chi-Square measurement is questionable.

CHI-SQUARE = 5.405

REJECT NULL HYPOTHESIS

Fisher’s Exact Measurement:

The *Fisher’s Exact* measurement can be used as an alternative to the Chi-Square measurement where a large sample is difficult to obtain. In order to reject the null hypothesis and conclude that there is a statistically significant difference between the two groups Fisher’s Exact must have a P-value **less than** the standard **.05**.

FISHER’S EXACT = .046

REJECT NULL HYPOTHESIS

Ratio:

The ratio to be measured is the ratio of *right response:wrong response*.

A *right response* would be nonsuccess in the prerequisite course combined with nonsuccess in the target course or success in the prerequisite course combined with success in the target course. A *wrong response* would be nonsuccess in the prerequisite course combined with success in the target course or success in the prerequisite course combined with nonsuccess in the target course. For the *study ratio* to meet the *ratio criteria* it must be greater than or equal to **2:1**.

RATIO: $12+0:25+3 = 12:28$ or **3:7** FAILED CRITERIA

Percent Increase:

Percent increase is measured by subtracting the percent success before adjusting for the prerequisite from the percent success after adjusting for the prerequisite. For the *study percent increase* to meet the *percent increase criteria* there must be a difference greater than or equal to **10%** in the positive direction.

PERCENT INCREASE: FAILED CRITERIA
 $25/40 = 63\%$ Before Prerequisite
 $0/3 = 0\%$ After Prerequisite

Summary

A total sample of 100, with at least 20 students in the non-successful group for the target course is recommended. In this case the total sample is insufficient (40), and the number in the non-successful group is below the recommended level (15). It should be noted that only 3 of the VN 101 students took READ 097. The Fishers Exact test is the only valid test in this case and it rejects the null hypothesis that READ 097 and VN 101 are independent. However, in light of the small sample size noted above and the failure of the Ratio and Percent Increase criteria we still conclude that READ 097 is unsuitable as a Prerequisite for VN 101. A new analysis with additional data is recommended at a later date to increase the sample size.