

# The OSCE Compared to the PACKRAT as a Predictor of Performance on the PANCE

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**Abstract.** *Background:* The purpose of this study was to compare the Physician Assistant Clinical Knowledge Rating and Assessment Tool (PACKRAT) and the Objective Structured Clinical Examination (OSCE) as predictors of performance on the Physician Assistant National Certifying Examination (PANCE). To become a physician assistant (PA) one must graduate from an accredited program and pass the PANCE. Due to the fact that the PACKRAT and the OSCE are being used to evaluate and prepare students to take the PANCE, it is imperative to know the predictive value of these exams on the PANCE. *Methods:* The data were collected on 84 WSU PA Program graduates of 2003 and 2004 who had taken the PANCE. The identified set of explanatory variables used included PACKRAT I and II, OSCE I and II, and PANCE scores. Correlation analysis was conducted comparing PACKRAT I, PACKRAT II, OSCE I, and OSCE II to PANCE using linear models to determine how the scores relate. *Results:* PACKRAT and PANCE scores were shown to be highly correlated. OSCE and PANCE scores were correlated, but to a lesser degree. Linear regression revealed a relationship between the PACKRAT and PANCE ( $P < 0.05$ ) as well as the OSCE and the PANCE ( $p < 0.001$ ). *Conclusion:* Both the PACKRAT and OSCE scores were predictive of PANCE scores. The PACKRAT was more predictive of the PANCE than the OSCE.

## 1. Introduction

### *Background and Purpose*

Physician Assistants are health professionals licensed to practice medicine with physician supervision. PAs exercise autonomy in medical decision making, providing a broad range of diagnostic and therapeutic services in a variety of practice settings. In order to become a licensed PA one must graduate from an accredited program and pass the PANCE. As part of preparing students for clinical practice, PA programs strive to prepare students for the PANCE, as passing rates are increasingly being used to measure the quality of a PA program. PA programs use several methods to evaluate students and prepare students to take the PANCE. These methods include exams such as the PACKRAT and the OSCE. The PACKRAT

was developed by a group of PA educators and clinicians in 1996. It is a 225 multiple-choice question examination, modeled from the PANCE Blueprint. The format of the OSCE varies by institution and program, but is generally comprised of numerous stations at which students perform various tasks such as history taking, physical exams, laboratory investigation and interpretation.<sup>1</sup> Several studies have looked at the PACKRAT as a predictor of the PANCE; however, there are no studies that have looked at the OSCE as a predictor of the PANCE. The purpose of this study was to compare the PACKRAT and the OSCE as predictors of performance on the PANCE.

## 2. Methods, Results, Discussion, and Significance

### *Methods*

The study data used in this investigation were collected on the Wichita State University PA Program graduates of 2003 and 2004 as part of the students' summative evaluation. For both classes, the PACKRAT I and OSCE I were administered at the end of the didactic year just prior to the beginning of clinical rotations. The PACKRAT II and OSCE II were administered during the clinical year and prior to the administration of the PANCE. The identified set of explanatory variables include PACKRAT I, PACKRAT II, OSCE I, OSCE II, and PANCE scores. Correlation analysis was conducted comparing PACKRAT I and PANCE, PACKRAT II and PANCE, OSCE I and PANCE, and OSCE II and PANCE to determine how the scores related. Linear regression was used to assess the capability of PACKRAT I, PACKRAT II, OSCE I, and OSCE II to predict the PANCE score.

### *Results*

Overall both classes were similar in terms of their demographic and descriptive variables. There was no significant difference in mean scores between the two classes as determined by independent samples t-test. Students in this study had an overall first time pass

rate on the PANCE of 95% (class of 2003) and 90% (class of 2004). PACKRAT and PANCE scores were shown to be highly correlated. OSCE and PANCE scores were also correlated, but to a lesser degree. Linear regression revealed a significant relationship between the PACKRAT and PANCE, with 58% of variance in PANCE scores being accounted for by the variance in PACKRAT scores. The OSCE scores account for 19% of variance in PANCE scores (Tables 1 and 2).

Table 1  
Pearson Correlation

	Class	P I	P II	O I	O II
<b>Pance</b>	2003	0.588*	0.806*	0.213	0.398*
	2004	*0.717*	*0.684*	.434**	*.325*
	Both	*0.602*	*0.744*	0.300*	0.353*

Notes: \*Correlation is significant at the 0.05 level (2-tailed).  
\*\*Correlation is significant at the 0.01 level (2-tailed).  
P = Packrat, O = OSCE

Table 2  
Linear Regression of PACKRAT, OSCE, and PANCE Scores

	R	R Square	Adj. R Square	Std. Error of the
<b>PACKRAT</b>	0.765	0.586	0.576	62.05009*
<b>OSCE</b>	0.435	0.189	0.169	86.169±
<b>COMBINATION</b>	0.777	0.603	0.583	61.042±

\* p < 0.05  
± p < 0.001

### Discussion

The results of this study demonstrated that PACKRAT and OSCE scores were correlated with PANCE scores and that PACKRAT and OSCE scores predicted success on the PANCE. However, upon interpretation of this data, it must be noted that this is a small sample size and results cannot be generalized beyond Wichita State University. Furthermore, OSCE development was not based on the PANCE Blueprint as was the PACKRAT, which raises concerns about its true predictability and most likely the reason for its lower correlation value.

These findings were consistent with results from previous studies looking at the correlation between the PACKRAT and PANCE (Cody et al, Bruce, Wilson). Although a review of the literature did not find any studies looking at the OSCE as a predictor of PANCE, it has been shown to be a predictor of certification exams in other areas of medicine. The results of this study were significant, considering previous studies looking at the ability of other

variables such as program characteristics and demographics to predict success on PANCE showed much lower correlations. Likewise, the results of this study were helpful to WSU faculty in determining the ability of these exams to evaluate student knowledge in a summative fashion and student preparedness to take the PANCE.

### 3. Conclusion

This study demonstrated that the PACKRAT and OSCE scores from Wichita State University's PA students from the classes of 2003 and 2004 were able to predict performance on the PANCE. The PACKRAT was more highly correlated to PANCE scores than the OSCE. The PACKRAT scores account for 58% of the variability seen on the PANCE. The OSCE scores account for 19% of the variability seen on the PANCE. Together they account for 60% of the variability seen on the PANCE.

### 4. Acknowledgement

Permission was granted by Dr. Muma to use previous data from Derek Wilson, Class of 2006, in his paper entitled PACKRAT: A Predictor of Success on the PANCE.

1. Harden RM, Gleeson FA. Assessment of clinical competence using an objective structured clinical examination (OSCE). *Medical Education*. 1979 1979;13:41-54.