



Validity of Acadaware's Performance Assessment System Compared to the PT CPI: Version 2006 in the Evaluation of Student Clinical Performance: A Pilot Study

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Background

The PT CPI: Version 2006 (CPI) is the most widely used assessment used to evaluate physical therapy students during full-time clinical experiences.^{1,2} While it does have moderate reliability and validity,² many CIs believe that it is time consuming and difficult to interpret.³ There have been attempts to create alternatives to the CPI,^{4,5} however, but studies have shown that there are disadvantages to each one.⁵ Recently Acadaware has created a new clinical evaluation tool, the Performance Assessment System (PAS) but it has not yet validated.

Purpose

1. To determine the correlation between CPI and PAS item scores and attempt to predict the scores of the CPI from the scores of the PAS
2. Attempt to predict CPI scores from scores of the PAS

Methods

Participants

A convenience sample of 8 WVU students and their CIs were recruited to participate in this study

Instrumentation

The CPI consists of 18 performance criteria that are grouped into two aspects of physical therapy practice: professional practice and patient management. CIs are required to provide written feedback on all criteria when assessing each student. Each criterion are scored on an 11 level ordinal scale ranging from "Beginner Performance" to "Beyond Entry-Level Performance." Definitions of the rating anchors are used to differentiate between each anchor.

The PAS consists of 10 competency categories. For each category, the CI assesses the student on a scale from 0-100, indicating the amount of supervision, guidance and/or correction the student requires. For this tool, a global mean is automatically produced at the end of each evaluation, which averages the percentage of each category.

Data Collection

Students were evaluated by their CIs at the midterm (4 weeks) and end (8 weeks) of their clinical experience using both evaluation tools. The scores were de-identified prior to analysis. A post assessment survey was also provided to the CIs to collect subjective feedback for each tool

Analysis

The global means as well as means of each individual criteria (CPI) and their matching competency categories (PAS) were analyzed to determine correlations between data points and to determine the accuracy to which the CPI scores could be predicted from the PAS scores using simple linear regression. To determine correlation, a Pearson correlation test was used.

Results

Correlation (Table 1)

Pearson correlation between the tools showed moderate to strong inverse correlation between all categories except Administration and Management category for the final evaluation. Comparison of the global means for midterm and final evaluations yielded strong inverse correlations, indicating that a decrease in the global PAS score (less supervision) is strongly related to an increase in the mean of all CPI criteria.

Regression (Figure 1)

Regression analyses support that more accurate predictions occur when the CPI global means are predicted from PAS global means versus predictions of individual categories. For midterm scores, prediction of CPI scores from PAS scores yielded the lowest standard error of the estimate (SEM = 0.36) and the greatest effect size ($R^2 = 0.801$). This indicates that 80% of the variance in the CPI score could be attributed to the scores of the PAS. Analyses of the Administration and Management category for both midterm and final evaluations displayed the greatest SEM and smallest R^2

Post Study Survey

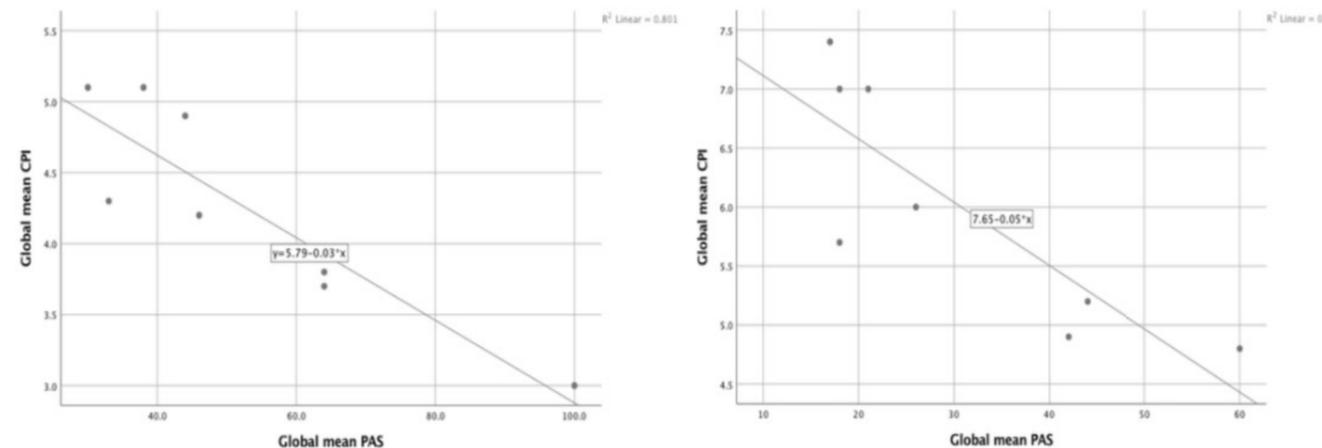
Survey responses reveal that the PAS is easier to understand, not as redundant, and can be completed more quickly and accurately

Table 1. Correlation between PAS and CPI categories for midterm and final evaluations

Category	Midterm	p value	Final	p value
Professionalism	-0.831	0.011	-0.865	0.006
Interpersonal Relation and Communication	-0.678	0.064	-0.797	0.018
Professional Development	-0.851	0.007	-0.873	0.005
Examination	-0.856	0.007	-0.857	0.007
Evaluation and Clinical Reasoning	-0.811	0.015	-0.693	0.057
Procedural Interventions	-0.688	0.059	-0.858	0.006
Documentation	-0.868	0.005	-0.841	0.009
Teaching and Education	-0.791	0.02	-0.934	0.001
Safety	-0.828	0.011	-0.802	0.017
Administration and Management	-0.603	0.113	-0.411	0.312
Global Means	-0.895	0.003	-0.838	0.009

Bolded values not significant at $p < 0.05$

Figure 1. Regression analysis using PAS scores to predict CPI scores for midterm (L) and final (R) evaluations



Discussion/Conclusion

Conclusion

Moderate to strong correlations and effect sizes are an important first step in determining the validity of the PAS. Comparison between Administration and Management (PAS) and Direction and Supervision of Personnel/Financial Resources (CPI) was the only category to show low correlation. Error of leniency is a common rater error, and is described as the tendency to avoid harsh evaluations to avoid conflict associated with honest feedback. Therefore, it is hypothesized that the CIs provided a CPI score based on where the student *should* be for their current clinical experience, and provided a PAS score more indicative of their true performance. It is also possible that these items were poorly understood, as the category definitions suggest that they measure similar components of PT practice.

The PAS can predict the individual CPI competency categories with moderate accuracy, but can predict global means with greater accuracy.

3 of the 4 CIs who returned the post-study survey preferred to use the PAS over the CPI. The most commonly cited reasons for this were that the PAS saved them time and the software interface was easier to use.

Limitations

The time period of data collection was only one 8-week clinical experience. Due to the short time frame for data collection, only 8 participants were recruited to participate. If a greater number of students were evaluated, and students from each clinical experience (beginner, intermediate, and final) were included, it is likely that the regression model would be closer to the true prediction.

Future Research

As validation data is strengthened, the PAS could become a viable alternative to the CPI to evaluate student clinical performance. Future studies should aim to include a larger sample size and incorporate students from beginning, intermediate, and final clinical experiences.

References

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