ATHLETIC TRAINING EDUCATION JOURNAL

www.nataej.org
ISSN: 1947-380X
DOI: 10.5608/0704152

ORIGINAL RESEARCH

Relationship Between Approved Clinical Instructors' Assessment of Athletic Training Student Clinical Performance and Their Clinical Grade

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Context: Approved Clinical Instructors (ACIs) are integral to athletic training students' professional development. ACIs evaluate student clinical performance using assessment tools provided by educational programs. How ACI ratings of a student's clinical performance relate to their clinical grade remains unclear.
Objective: To examine relationships between ACI evaluations of student clinical performance using an athletic training-specific inventory (Athletic Training Clinical Performance Inventory; ATCPI) and the student's clinical grade (CG) over a clinical experience.
Design: Correlational.
Setting: Large metropolitan university.
Participants: 48 ACIs (M=20; F=28; Certified for 7.5±3.2yrs; ACIs for 3.2±1.5yrs) evaluating 62 undergraduate students (M=20; F=42).
Interventions: ACIs completed the ATCPI twice (mid-semester, and end-of semester) during their student's clinical experience. The ATCPI is a 21-item instrument: Items 1-20 assess the student's clinical performance based on specific constructs (Specific) and item 21 is a rating of the student's overall clinical performance (Overall). ACIs also assigned students a clinical grade (CG). Pearson product-moment correlations examined relationships between Specific, Overall, and CG, with separate paired t-tests examining differences ($p<.05$).
Main Outcome Measures: The ATCPI used a 4-point Likert-type scale anchored by 1 (Rarely) and 4 (Consistently), and CG (A=4, B=3, C=2 D =1, 0=F).
Results: Two-hundred and sixty-six ATCPI instruments were completed over 4 academic years. The ATCPI demonstrated acceptable reliability (Cronbach's alpha=.88). All three measures were positively correlated (Specific and Overall, $r(264)=.65$, $P<.001$; Specific and CG $r(264)=.63$, $P<.001$; Overall and CG $r(264)=.55$, $P<.001$). No differences existed between Specific (3.5±0.4) and CG (3.5±0.7; $t=.60$, $P=.55$). However, Overall (3.6±0.7) was significantly higher than both Specific ($t=-3.45$, $P<.000$) and CG ($t=2.05$, $P=.04$).
Conclusions: ACIs reliably assessed students' specific clinical performance and provided a relatively accurate grade. However, since the overall scores were higher than specific item scores, ACIs overestimated students' overall clinical performance. Additional research is necessary to examine the ATCPI as an assessment tool across multiple institutions and to determine how other variables affect ACI assessments of student performance.
Key Words: Assessment, Education, Athletic Training Clinical Performance Inventory, Ratings

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Full Citation:
Ambegaonkar JP, Caswell S, Caswell A. Relationship Between Approved Clinical Instructors' Assessment of Athletic Training Student Clinical Performance and Their Clinical Grade. *Athl Train Educ J*. 2012, 7(4):152-156.

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Introduction

Similar to preceptors in other healthcare education models,[1,2] Approved Clinical Instructors (ACIs) are essential to athletic training students' professional preparation. Across healthcare disciplines, proper teaching and assessment of clinical skills and professional behaviors are fundamental to practitioner preparation. Allied health education programs have developed discipline-specific measurement tools for instructors to evaluate student clinical performance and track student development.[1-5] Examples of clinical performance assessment instruments used in healthcare fields include the Physical Therapy Clinical Performance Instrument[6] and the Nursing Student Clinical Performance Evaluation Scale.[5] Researchers have evaluated the psychometric properties and validity of the data associated with these clinical performance instruments in health education programs.[2,6] Specifically, the Physical Therapy Clinical Performance Instrument is a valid[6] and internally reliable[2] measurement of physical therapy student clinical performance, and the Nursing Student Clinical Performance Evaluation is a valid and reliable measurement of nursing student clinical performance.[5]

Athletic Training is a healthcare profession, with over than 350 accredited entry-level Athletic Training Education Programs (ATEPs) currently in existence in the United States. According to the Standards for the Accreditation of Entry-Level ATEPs by the Commission on Accreditation of Athletic Training Education (CAATE), each student must receive clinical experiences contained within individual courses over a minimum of two academic years. Further standards mandate that ATEP faculty frequently evaluate student progress and learning and regularly communicate with ACIs.[7] Thus, ACIs spend considerable time mentoring and evaluating athletic training students. In this role, ACIs appraise various aspects of students' clinical performance using measurement tools provided by the ATEP. These assessment tools are commonly used to both assess students' specific clinical skills and communicate their overall clinical achievement (eg, provide a grade) to ATEP faculty at regular intervals during the clinical experience. Specifically, Scriber et al [8] report that 88% of ATEP use letter grades for their clinical courses.

Despite the wide use and importance of ACI ratings in student development, little published research in the Athletic Training field has actually examined the reliability of the ACI appraisals of athletic training student clinical performance in relation to their Clinical Grade. Examining these relationships is important for two reasons: 1) theoretically, ACIs' ratings of student clinical performance and appraisal of clinical grades should positively correlate; and 2) clinical performance instruments are frequently used by ATEPs to appraise student performance, track their development, and inform interventions when necessary. Other educators[8] have also suggested that all ATEPs should consider the possibility of using a similar assessment tool for student clinical performance. However, to our knowledge, a single accepted assessment tool does not currently exist in athletic training education. Therefore, our purpose was to examine relationships between ratings of specific clinical performance, overall clinical performance, and clinical grade using an Athletic-Training-Specific clinical performance inventory.

Methods

Participants

Forty-eight ACIs (M=20; F=28; Board of Certification certified for 7.5+3.2 yrs; ACIs for 3.2 +1.5 yrs) evaluated 62 undergraduate students (M=20; F=42) at a large metropolitan university using the Athletic Training Clinical Performance Inventory (ATCPI).

Athletic Training Clinical Performance Inventory (ATCPI)

Based on published assessment tools used to assess professional development,[9] the ATCPI is a 21-item instrument scored on a 4-point Likert-type scale (1=Rarely to 4=Consistently) designed to provide an athletic

training specific assessment of student clinical performance (Figure 1). Three ATs with a combined 32± years of professional experiences as ACIs and/or faculty members (program directors and clinical coordinators) at eight different ATEPs established the ATCPI's face validity by meeting collectively to confirm that items were appropriate and adequate to evaluate multiple facets of athletic training student clinical performance. Items 1-20 combined to form a summative measure of students' specific clinical performance skills (Specific), and item 21 required ACIs to rate students' overall clinical performance (Overall). The instrument also asked ACIs to assign students a clinical letter grade (CG), where A = 4.0, Excellent, B = 3.0, Above Average, C = 2.0, Average, D = 1.0, Below Average and F = 0.0, Fail. Finally, the instrument solicited open-ended feedback from ACIs regarding student clinical performance. The participating ACIs were instructed on how to use the ATCPI during their formal ACI training session. They were also encouraged to ask questions about the ATCPI at that time, and were instructed to contact the ATEP faculty if they required additional information when grading their students' clinical performance during the clinical experience.

Procedures

The university Institutional Review Board approved all study procedures. Each ACI completed the ATCPI twice (mid-semester, and end-semester) during their students' clinical field experiences. The evaluations were performed as a part of the normal ATEP assessment plan. We analyzed the ATCPI responses across 4 academic years. All clinical experiences were semester-long (~15 weeks), and required approximately 15 hours of contact time between the ACI and student per week, for a 200-250 hour semester-long clinical experience. Each student was evaluated by a different ACI each semester. Mean scores were calculated and analyzed for Specific, Overall, and CG for the clinical course.

Statistical Analyses

Three separate paired t-tests examined differences between Specific, Overall, and CG. Pearson product-moment correlations examined relationships between the mean scores on Specific, Overall, and CG. The alpha level was set at $P<0.05$ for all tests.

Results

Two-hundred-and-sixty-six completed ATCPI instruments were included in the analyses. The ATCPI demonstrated acceptable reliability (Cronbach's Alpha = .88). No differences existed between ACIs' assessments of student specific clinical performance (3.5 ± 0.4) and clinical grade (3.5±0.7; t=.60, P=.55). However, ACIs' assessments of students' overall clinical performance (3.6±0.7; t=-3.45, P<.000) was significantly higher than their ratings of student specific clinical performance and clinical grade (t=2.05, P=.04). All three measures were positively correlated with each other (Specific and Overall, r(264)=.65, P<.001; Specific and clinical grade r(264)=.63, P<.001; Overall and clinical grade r(264)=.55, P<.001).

Discussion

Principal Findings

Our principal findings were that ACIs reliably evaluated student clinical experience performance. Moreover, ACIs ratings of specific clinical performance were similar to clinical grade scores. This finding suggests that ACIs' ratings of students on specific clinical performance constructs were reflected in their assigned letter grade. However, we also noticed that ACIs might be overestimating students' overall clinical performance (ie, giving students an overall higher clinical performance grade, despite rating their specific clinical performance lower). Finally, relationships between ACI ratings of specific and overall clinical performance and specific clinical performance and clinical grade scores were all positively related to each other.

ACI Role in Student Clinical Performance Assessment

Approved Clinical Instructors are vital to student development and professional socialization.[3,4] Similar to other allied healthcare fields, athletic training students frequently spend extended periods of time with ACIs during their clinical experiences. Therefore, ACIs are ideally positioned to assess student clinical performance. Our findings support the common practice by ATEPs to use ACIs to track student clinical performance progress. Since the Board of Certification (BOC) examination is now entirely online, ACIs are often key gatekeepers to confirm that students are competent in the required hands-on practical skills and

can successfully interact in real-time with patients. Our findings should encourage athletic training educators (eg, program directors and clinical coordinators) to be confident in their ACIs' appraisal of a student's performance.

Higher Overall Clinical Performance Scores

We noted that ACIs appeared to be lenient in their appraisal of students' overall clinical performance, as evidenced by the higher overall scores. One possible explanation for this observation may be psychological factors that moderate the ACI's holistic appraisal of a student's clinical performance. Specifically, the ATCPI evaluations were not blinded. In fact, both the ACIs and students were expected to meet after the grading was performed to discuss the assessment and sign the completed instrument.

In our experience, students often focused on Item 21 of the ATCPI (ie, Overall) when examining how their ACI graded their overall performance, and often skipped over the specific items (Items 1-20) in the instrument. Thus, if there was a positive or negative emotional attachment between an ACI and a student, or if an ACI was uncomfortable with openly confronting the student with concerns regarding the clinical performance, they would have graded students higher (positive attachment) or lower (negative attachment) on the overall clinical performance (Item 21), but have been more precise when rating the student's specific clinical performance (Items 1-20). With our program observations that most clinical experiences were positive for both ACIs and students, the findings are understandable with more ACIs giving their students higher overall grades on Item 21, despite being more critically precise on Items 1-20.

Clinical Performance Measurement

Clinical performance is a multi-dimensional construct, and despite well intentioned educators, is not easily measured.[10,11] In fact, some educators believe that while feedback is necessary, grades are not necessary to evaluate all aspects of clinical performance.[8] Still, for successful performance in a clinical setting, students are required to have an understanding of athletic training knowledge and demonstrate practical application of skills on actual patients while incorporating the foundational behaviors of professional practice, including appropriate attitudes and behaviors.[2, 4] Thus, whether a single instrument like the ATCPI can actually effectively measure all dimensions of clinical performance deserves further study.

Limitations and Future Recommendations

We acknowledge some limitations and suggest recommendations for future work. Since this study used a correlational design that only establishes relationships and does not causally link variables, no predictive relationships should be assumed between study variables. While we used a combination of genders across our students and ACIs, caution should be used when generalizing to results other ATEPs outside our population of undergraduate athletic training students. For example, the students enrolled in entry-level masters ATEPs are graduate students, and whether ACIs respond to them differently when grading as compared to undergraduate students needs further study. Additional work may be also required to refine the ATCPI instrument across longitudinal designs and across multiple institutions to examine whether the ATCPI can predict BOC examination success rates.

We also understand that the ATCPI may have some flaws, including the fact that 20 specific items may not encompass all clinical performance characteristics. In agreement with Scriber et al,[8] we believe that a consistent AT student clinical performance assessment tool is needed for all ATEPs to use to track athletic training education progress. Specifically, we hope that the ATCPI marks a starting point for athletic training educators to begin refining and devising an AT-specific clinical performance tool that is accepted and implemented across all ATEPs.

Researchers should also examine relationships between clinical performance and intrinsic factors that may include, but not be limited to, gender, number of students supervised, age and years of experience of both students and ACIs, and education levels of both students and ACIs. Multiple extrinsic factors may also affect clinical performance appraisals, including the clinical setting (university, high school, clinic, etc.) and the timing of assessments (mid, end-semester). Further research is also warranted to investigate how other variables (eg, years of ACI experience, number of students supervised, education level, and clinical setting) may affect ACI assessments of student clinical performance.

Practical Applications

Our findings can be applied by AT educators when training or retraining ACIs. Specifically, during the ACI training sessions, ATEP educators could use our findings to explicitly remind ACIs to remain objective when grading students' clinical performance holistically (overall). AT educators may also use our results and the ATCPI longitudinally to identify ACIs who consistently provide differing specific vs. overall ATCPI scores. The educators could then offer remedial training to these ACIs to ensure reliability when grading student performance at their clinical field experiences.

Conclusions

Overall, our exploratory study is among the first investigations in the athletic training field to examine relationships between an ACI-evaluated student clinical performance-rating instrument and the student's clinical grade. The ATCPI may be a valuable tool for ATEP faculty and ACIs to measure athletic training student clinical performance. In general, ACIs appear to consistently appraise specific clinical performance, but may indulgently overrate overall clinical performance. Therefore, during ACI training, additional guidance may be necessary to remind ACIs not to allow personal feelings to influence their ratings of overall student clinical performance.

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