Development of Standards and Criteria for the Selection, Training, and Evaluation of Athletic Training Approved Clinical Instructors

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Weidner, T. G. & Henning, J. M. (2004). Development of Standards and Criteria for the Selection, Training, and Evaluation of Athletic Training Approved Clinical Instructors. *Journal of Athletic Training, 39 (4)*, 335-343.

Abstract:

Objective: To develop standards and associated criteria for the selection, training, and evaluation of athletic training approved clinical instructors (ACIs).

Design and Setting: A previously developed set of 7 physical therapy clinical instructor standards/criteria and 2 additional standards/criteria developed through a review of the literature were systematically adapted, judged, and revised through a Delphi technique.

Subjects: Athletic training education experts currently employed as program directors for entry-level Commission on Accreditation of Allied Health Education Programs-accredited athletic training educational programs and who had the following: a doctoral degree, at least 5 years of supervising athletic training students, and familiarity/experience with clinical instruction in various athletic training clinical education settings.

Measurements: We used panelists' critiques and ratings to make sequential revisions in a series of 3 Delphi rounds. Standards were rated as to whether they were clear, necessary, and appropriate. We rated criteria for the associated standard as to whether they were useful, helpful, clear, specific, and consistent.

Results: We developed a final set of 7 standards and 50 associated criteria to measure these standards. The accepted standards include the following: legal and ethical behavior, communication skills, interpersonal relationships, instructional skills, supervisory and administrative skills, evaluation of performance, and clinical skills and knowledge.

Conclusions: The 7 standards and associated criteria developed in this research project could be used not only for selecting, training, and evaluating an ACI but also for developing an understanding of the requirements of clinical education in general. Further research should include validating these standards/criteria among athletic training ACIs representing different types of clinical settings.

Key Words: clinical instruction, clinical education, clinical instructor educator

Article:

Clinical education is a critical component of allied health education programs, and athletic training is no exception.1 Athletic training clinical education involves the supervised acquisition, practice, and evaluation of the Entry-Level Athletic Training Clinical Proficiencies.[2] The athletic training clinical education guidelines recently developed by the National Athletic Trainers' Association (NATA) Education Council and regulated by the Joint Review Committee on Educational Programs in Athletic Training and the Commission on Accreditation of Allied Health Education Programs (CAAHEP) reflect a more qualitative orientation to clinical education.[3] These guidelines require a more standardized approach to clinical education content and increased accountability in the teaching and documenting of clinical proficiencies. Although the revised clinical education format is part of the evolutionary process of education reform, it has placed more clinical teaching and evaluation responsibilities on certified athletic trainers who may not have had a pedagogic focus in their professional preparation.[1] Similar to the field of athletic training, it is not uncommon to find that other allied health clinical instructors, in general, have not had formal preparation in education and have been selected

because of their professional aptitudes rather than their teaching and student evaluation skills.[4] Clinical expertise as an athletic trainer is important, but it does not guarantee expertise as a clinical instructor.

An increasing need has been identified within the profession of athletic training to provide training and development for clinical instructors. The 2001 CAAHEP Standards and Guidelines for an Accredited Educational Program for the Athletic Trainer include a guideline that certified athletic trainers complete professional training for their roles as clinical instructors.[5] Under the direction of the Clinical Education Subcommittee of the NATA Education Council, Clinical Instructor Educator (CIE) seminars were developed and first conducted in June 2000. An overriding goal of the seminars is to equip program directors and clinical education coordinators with the information and resources to serve as CIEs at their institutions. The CIEs train approved clinical instructors (ACIs) to effectively teach and evaluate the athletic training clinical proriciencies. In order to bring credence and validity to the educational practices of athletic training clinical instructors, it is imperative that expectations for educational practices be established and investigated by members of the profession rather than our simply borrowing and adapting practices from other allied health care professions.

The central problem we addressed in this research is that the athletic training profession does not have research-based and peer-reviewed clinical instructor standards and criteria on which to center the selection, training, and evaluation of ACIs who supervise students during their clinical field experiences. Therefore, our specific aim was to develop such standards and criteria to be used by CIEs as a foundation in the selection, training, and evaluation of ACIs. Standards are defined as a degree or level of requirement, excellence, or attainment. Criteria are defined as items on which a judgment or decision can be based for the attainment of a standard.[6]

In conjunction with the specific aim of this study, we addressed the following research questions: (1) Is each proposed standard clear, necessary, and appropriate for the selection, training, and evaluation of ACIs? (2) Are the proposed criteria for the ACI standards useful, clear, specific, and consistent with the standards?

We expect this research will assist us in better meeting the needs of athletic training students by fostering and enhancing the quality of clinical instruction in athletic training, thus preparing more competent practitioners to serve physically active populations.

METHODS

Research Design

We used the Delphi technique for systematic consensus building among a group of athletic training education experts. This technique encourages open professional opinions without the negative effects of group dynamics such as peer-group pressure to conform to opinion.[7,8] Responses from the Delphi panel members were anonymous to the other panel members. Using the consultative Delphi technique to determine the components of professional effectiveness improves the validity of the study from 2 aspects.[9] First, the standards identified by the experts have a high face validity because they appear to be the most relevant standards to those who are experts in clinical education. Second, when the panel reached consensus, it can be argued as evidence of concurrent validity in that the experts themselves have both identified and agreed on the requisite standards.[9] An arguable weakness of the Delphi technique is its time-intensive nature and the need for panelists to remain on task.[8] Therefore, we provided a modest stipend as an incentive for panelists to remain committed and to respond in a timely fashion.

Delphi Panel Selection

All program directors of entry-level CAAHEP-accredited athletic training educational programs as of February 2003 were solicited via electronic mail to participate in this study (N = 183). Although 79 program directors initially agreed to participate, only 44 satisfied all of the following inclusion criteria:

1. Program director for an entry-level CAAHEP-accredited athletic training education program,

2. Completed doctoral degree (PhD, EdD, or equivalent),

3. Minimum of 5 years' experience supervising athletic training students in the clinical setting,

4. Familiarity/experience with clinical instruction in various athletic training clinical education settings (eg, clinic based, high school, and college/university), and

5. Interest in serving as a Delphi panelist.

Table 1. Initial Standards Reviewed in Round 1

The approved clinical instructor (ACI) demonstrates
1. legal and ethical behavior that meets the expectations of members of the profession of athletic training.
2. effective communication skills.
3. effective behavior, conduct, and skill in interpersonal relationships.
4. effective instructional skills.
5. effective supervisory skills.
6. effective student performance evaluation skills.
7. clinical competence in the athletic training domains as described by the *Role Delineation Study* and the *Athletic Training Educational Competencies*.
8. effective administrative skills that relate to athletic training clinical education and supervision.
9. commitment to his or her professional development as well as that of the student.

Twenty panelists were randomly selected from the qualified pool of 44 subjects. The selected panelists received, via electronic mail, information regarding the purposes of this study and the need for ACI standards. In addition, we informed panelists of the overall process and rationale for using the Delphi technique as well as their responsibilities in the study. Panelists were also advised of the time-intensive nature and commitment level required for this study. Two panelists dropped out of the study after the first round of data collection, and 2 more panelists dropped out after the second round, leaving a total of 16 panelists who completed all responsibilities in the study.

Procedures and Instrumentation

This study was approved by the Institutional Review Boards at Ball State University and the University of North Carolina at Charlotte. Panelists indicated consent by virtue of their completion of the associated questionnaires.

We presented the potential standards and criteria in the form of a questionnaire. Each questionnaire dissemination and return was termed a "round."[8] Panelists received, via electronic mail, instructions for completing a particular round and a link to the Web-based questionnaire. The Delphi questionnaires were piloted with a convenience sample of 5 education experts to gather information about clarity and format before each round. These 5 individuals were excluded from participation in the Delphi study. We regularly used electronic mail and telephone correspondence to help keep the panelists on task and to answer their questions as they arose. Each round lasted approximately 4 weeks, with 2 weeks for panelists to respond and 2 weeks for the data to be processed and to create the next questionnaire.

Round 1. The first round largely involved guided exploration and was designed to engage panelists in brainstorming.[10] To initiate the brainstorming process, we provided the panelists with 9 initial potential standards (Table 1) and 76 associated criteria we generated from a review of the medical and allied medical clinical education literature.[1] They were also instructed to propose any additional standards and criteria they deemed essential for selecting, training, and evaluating athletic training ACIs.

Seven of these initial potential standards and associated criteria were adapted (ie, to reflect athletic training clinical education context) from the American Physical Therapy Association's Guidelines for Clinical Instructors.[11] We included these 7 standards and associated criteria in this study because their content was amply supported in the clinical education literature.[1]

Using an open-ended format, we instructed panelists to carefully consider the clarity, necessity, and appropriateness of each of the 9 potential standards and associated criteria as well as the consistency of the criteria with the associated standard. This initial set of potential standards and criteria was intentionally broad and open to interpretation, thus facilitating comments and revisions from the panelists.

Round 2. Round 2 consisted of a second questionnaire created through the synthesis of panelists' comments from the first round. This input regarding the initially reviewed and additional standards and criteria proposed by the panelists was compiled, summarized, and used to reformulate the standards/ criteria. In this round, we instructed the panelists to rate the standards on a Likert scale of 1 to 5, with 1 being low and 5 being high, for the following measures:

Necessary: required for selecting, teaching, and evaluating ACIs;

Appropriate: suitable for selecting, teaching, and evaluating ACIs, and

Clear: understandable, not ambiguous.

Panelists were then instructed to rate each criterion for the associated standard on a Likert scale of 1 to 5, with 1 being low and 5 being high, for the following measures:

Usefulness: the criterion is helpful in assessing that the standard has been attained;

Clarity: the criterion is understandable and not ambiguous;

Specificity: the criterion is precisely connected to the associated standard, and

Consistency: the criterion is logically connected with the associated standard.

Panelists were encouraged to provide comments to support their ratings of both the standards and criteria.

Round 3. Round 3 consisted of a third questionnaire based on the analysis of the ratings and comments from round 2. With the third questionnaire, we provided the panelists a summary of the mean, standard deviation, and interquartile range of each of the rating responses. As supported by the literature, we determined the statistical definition of consensus.[8] For the purposes of this study, consensus to retain an item was defined as a minimum mean score of 4.0, with a standard deviation of ≤ 1.0. Statistical analysis was performed using the Statistical Package for the Social Sciences (version 11.0; SPSS Inc. Chicago, IL). Those standards and criteria for which consensus to retain was not reached during round 2 were revised based on panelists' comments and reevaluated in this round. A summary of the standards and criteria for which consensus was achieved was also included, and these were no longer rated by the panelists.[12] However, the consensus items remained on the third questionnaire, in a different font and without a rating scale, in order to assist the panelists in rating the nonconsensus items.

RESULTS

In 3 rounds, the Delphi panel reached consensus on the essential standards and criteria necessary to select, train, and evaluate ACIs. A total of 7 standards, each with 3 to 13 criteria, was ultimately developed (Table 2). The mean ratings of the final accepted standards ranged from 4.5 to 4.9 for necessity, 4.5 to 4.9 for appropriateness, and 4.1 to 4.7 for clarity, all with a standard deviation of less than 1.0. The mean ratings of the accepted associated criteria for the standards ranged from 4.0 to 5.0 for consistency, 4.0 to 5.0 for specificity, 4.1 to 5.0 for usefulness, and 4.1 to 4.9 for clarity, all with a standard deviation of less than 1.0.

Each of the 3 rounds yielded numerous valuable comments from the panelists regarding the clarity, necessity, and appropriateness of each of the potential standards and associated criteria as well as the consistency of the

criteria with the associated standard. For example, 1 panelist offered the following comment during round 1 to add a criterion to further clarify the Evaluation of Performance standard: "Maybe add something more specific as to following proper evaluation standards as outlined by the athletic training education program." Panelists also offered general comments in support of the development of guidelines for ACIs. For example, 1 panelist indicated "a good job with the standards. We utilize many of these criteria already in the ACI evaluation process, where the students evaluate the ACIs."

DISCUSSION

Until this time, there have been no research-based standards and associated criteria for clinical instructors in athletic training or in any medical or allied medical field. The standards developed in this study are considered by a panel of athletic training education experts to be necessary, clear, and appropriate for the selection, training, and evaluation of ACIs. All these standards are consistent with the intents of the CAAHEP accreditation guidelines. What follows is a discussion of each of the clinical instructor standards developed in this research. Our results and the literature amply support the qualities, characteristics, and skills associated with these standards and their necessity and appropriateness in clinical education.

Legal and Ethical Behavior

Approved clinical instructors, as well as all certified athletic trainers, should conduct themselves in a manner that reflects appropriate legal and ethical behavior. This includes abiding by the NATA Code of Ethics,[13] designed to keep athletic trainers aware of the professional conduct required in the practice of athletic training. The code represents ethical principles and standards for all certified athletic trainers. Of particular importance to clinical instructors is the principle of complying with federal, state, and local laws and regulations governing the practice of athletic training. Most states have a form of regulation (ie, registration, certification, licensure, and exemption) that will affect the roles of certified athletic trainers as clinical instructors.[14]

The ACIs must also remain in good standing with the Board of Certification. The board requires all certified athletic trainers to obtain 80 continuing education units every 3 years in order to maintain their certification.[15] Individuals who do not fulfill the continuing education requirements are placed on probation. Any irresponsible behavior regarding state regulation or board certification would certainly provide a poor professional example for athletic training students.

Communication Skills

The ACI should demonstrate effective communication skills. Several studies indicate that effective communication skills are essential for a successful teaching/learning exchange to occur.[4,16-19] The effective ACI draws on a broad range of communication skills to choose the most appropriate communication style for the teaching situation.[20] The communication style should be nonthreatening to students.[4,17,18] Along these same lines, ACIs must recognize the importance of correcting students tactfully while providing a clear, honest perception of each student's abilities.[16,17]

The ACIs need to engage in positive communication behaviors that encourage student-teacher dialogue. For instance, demonstrating active listening skills and asking open-ended questions create an environment that illustrates the ACI's sincere interest in the student.[16,17,19] The ACI should clearly explain clinical problems and expectations in a comprehensible manner,[17] maintaining a balance between sharing information and knowledge and permitting freedom of discussion.[16]

Interpersonal Relationships

The ACI should enter into positive and effective interpersonal relationships and be a professional role model/mentor.[16,21,22] Because interpersonal relationships are crucial in making the student feel valued as a person,[16] the effective ACI should approach the teaching/learning process and student interaction with enthusiasm and positivity.[16,21,23-25] The ACI should not only be friendly, honest, and approachable but also show a genuine interest and concern for the student as a learner and as a person.[4,16,18,25,26] Moreover, the clinical setting is distinct from the classroom in that it includes patient care.[1] Therefore, it is essential that ACIs set an

example of sincere interest in their patients as well as in their students.[3,16,18,27] The ACIs should uphold and encourage professional behavior in their students at all times during the clinical experience.

It is not uncommon in the clinical education setting for 1 ACI to be supervising multiple students. Therefore, ACIs must be able to interact well not only with students on a 1-on-1 basis but with multiple students on a group basis as well.[28] In addition, the ACI should demonstrate the ability to relate interpersonally with a wide variety of students of different sexes, races, ethnicities, personalities, and levels of knowledge. The ACIs should actively try to gain the perspective of the students while providing their own perspective on clinical practice.[29] The ACIs may find that through self-disclosure they are able to relate to the student that he or she is not alone in the learning process and that certain stresses and frustrations are common during clinical education in the clinical environment.[19,29]

Table 2. Final Approved Clinical Instructor Standards and Criteria

Standard 1.0 (Legal and Ethical Behavior)

The approved clinical instructor (ACI) demonstrates legal and ethical behavior that meets the expectations of members of the profession of athletic training.

Criterion 1.1

The ACI holds the appropriate credential (National Athletic Trainers' Association Board of Certification certification and state license, registration, certification, or exemption, if applicable) as required by the state in which the individual provides athletic training services.

Criterion 1.2

The ACI provides athletic training services that are defined by the *Role Delineation Study* and within the scope of the respective state practice act (if applicable).

Criterion 1.3

The ACI provides athletic training services that are consistent with state and federal legislation. Examples include equal opportunity and affirmative action policies, the Americans with Disabilities Act (ADA), the Health Insurance Portability and Accountability Act (HIPAA), and the Family Educational Rights and Privacy Act (FERPA).

Criterion 1.4

The ACI demonstrates ethical behavior as defined by the NATA *Code of Ethics* and the NATA Board of Certification *Standards of Professional Practice*.

Standard 2.0 (Communication Skills)

The ACI demonstrates effective communication skills.

Criterion 2.1

The ACI communicates with the Program Director and/or Clinical Education Coordinator regarding athletic training student progress toward clinical education goals at regularly scheduled intervals determined by the athletic training education program.

Criterion 2.2

The ACI uses appropriate forms of communication to clearly and concisely express himself or herself to athletic training students, both orally and in writing.

Criterion 2.3

The ACI provides appropriately timed and constructive formative and summative feedback to athletic training students.

Criterion 2.4

The ACI facilitates communication with athletic training students through open-ended questions and directed problem solving.

Criterion 2.5

The ACI ensures time for ongoing professional discussions with the athletic training student in the clinical setting.

Criterion 2.6

The ACI communicates with athletic training students in a nonconfrontational and positive manner.

Criterion 2.7

The ACI receives and responds to feedback from the Program Director and/or Clinical Education Coordinator and athletic training students.

Standard 3.0 (Interpersonal Relationships)

The ACI demonstrates appropriate and professional interpersonal relationships.

Criterion 3.1

The ACI forms appropriate and professional relationships with athletic training students.

Criterion 3.2

The ACI models appropriate and professional interpersonal relationships when interacting with athletic training students, colleagues, patients/athletes, and administrators.

Criterion 3.3

The ACI appropriately advocates for athletic training students when interacting with colleagues, patients/athletes, and administrators.

Criterion 3.4

The ACI is a positive role model and/or mentor for athletic training students.

Criterion 3.5

The ACI demonstrates respect for sex, racial, ethnic, religions, and individual differences when interacting with people.

Criterion 3.6

The ACI has an open and approachable demeanor to athletic training students when working in the clinical setting.

Standard 4.0 (Instructional Skills)

The ACI demonstrates effective instructional skills.

Criterion 4.1

The ACI collaborates with the Program Director and/or Clinical Education Coordinator to plan learning experiences.

Criterion 4.2

The ACI implements, facilitates, and evaluates planned learning experiences with athletic training students.

Table 2. Continued

Criterion 4.3

The ACI understands the athletic training students' academic curriculum, level of didactic preparation, and current level of performance relative to the goals of the clinical education experience.

Criterion 4.4

The ACI takes advantage of teachable moments during planned and unplanned learning experiences by instructing skills or content that is meaningful and immediately applicable.

Criterion 4.5

The ACI employs a variety of teaching styles to meet individual athletic training students' needs.

Criterion 4.6

The ACI helps athletic training students progress toward meeting the goals and objectives of the clinical experience as assigned by the Program Director and/or Clinical Education Coordinator.

Criterion 4.7

The ACI modifies learning experiences based on the athletic training students' strengths and weaknesses.

Criterion 4.8

The ACI creates learning opportunities that actively engage athletic training students in the clinical setting and that promote problem solving and critical thinking.

Criterion 4.9

The ACI encourages self-directed learning activities for athletic training students when appropriate.

Criterion 4.10

The ACI performs regular self-appraisal of his or her teaching methods and effectiveness.

Criterion 4.11

The ACI is enthusiastic about teaching athletic training students.

Criterion 4.12

The ACI communicates complicated and detailed concepts in terms that students can understand based on their level of progression within the athletic training education program.

Criterion 4.13

The ACI encourages athletic training students to engage in self-directed learning as a means of establishing lifelong learning practices of inquiry and clinical problem solving.

Standard 5.0 (Supervisory and Administrative Skills)

The ACI demonstrates effective supervisory and administrative skills.

Criterion 5.1

The ACI directly supervises athletic training students during formal acquisition, practice, and evaluation of the Entry-Level Athletic Training Clinical Proficiencies.

Criterion 5.2

The ACI intervenes on behalf of the athlete/patient when the athletic training student is putting the athlete/patient at risk or harm.

Criterion 5.3

The ACI encourages athletic training students to arrive at clinical decisions on their own according to their level of education and clinical experience.

Criterion 5.4

The ACI applies the clinical education policies, procedures, and expectations of the athletic training education program.

Criterion 5.5

The ACI presents clear performance expectations to athletic training students at the beginning of and throughout the learning experience.

Criterion 5.6

The ACI informs athletic training students of relevant policies and procedures of the clinical settings.

Criterion 5.7

The ACI provides feedback to athletic training students from information acquired from direct observation, discussion with others, and review of athlete/patient documentation.

Criterion 5.8

The ACI treats the athletic training students' presence as educational and not as a means for providing medical coverage.

Criterion 5.9

The ACI completes athletic training students' evaluation forms requested for the athletic training education program in a timely fashion.

Criterion 5.10

The ACI provides the Program Director and/or Clinical Education Coordinator with requested materials as required for the accreditation process.

Criterion 5.11

The ACI collaborates with athletic training students to arrange quality clinical education experiences that are compatible with the students' academic schedules.

Table 2. Continued

Standard 6.0 (Evaluation of Performance)

The ACI effectively evaluates athletic training students' performances.

Criterion 6.1

The ACI notes the athletic training students' knowledge, skills, and behaviors as they relate to the specific goals and objectives of the clinical experience.

Criterion 6.2

The ACI communicates with the Program Director and/or Clinical Education Coordinator regarding implementing and/or clarifying the athletic training education program's performance-evaluation instruments.

Criterion 6.3

The ACI records student progress based on performance criteria established by the athletic training education program and identifies areas of competence as well as areas that require improvement.

Criterion 6.4

The ACI approaches the evaluation process as constructive and educational.

Criterion 6.5

The ACI communicates with the Program Director and/or Clinical Education Coordinator in a timely manner when an athletic training student needs remediation.

Criterion 6.6

The ACI and athletic training students participate in formative (ie, ongoing specific feedback) and summative (ie, general overall performance feedback) evaluations.

Standard 7.0 (Clinical Skills and Knowledge)

The ACI demonstrates clinical skills and knowledge that meet or exceed the athletic training education competencies and clinical proficiencies.

Criterion 7.1

The ACI is capable of teaching and evaluating the clinical proficiencies that are particular to the setting or environment.

Criterion 7.2

The ACI's knowledge and skills are current and support care decisions based on science and evidence-based practice.

Criterion 7.3

The ACI maintains his or her clinical skills and knowledge through participation in continuing education programs.

Instructional Skills

The ACI should demonstrate effective instructional skills during the clinical education experience and be knowledgeable in basic educational principles regarding clinical teaching.[30]

A connection has been made between clinical education and the principles of adult education.[31] Students involved in the clinical education component of athletic training education should be viewed as adults who are voluntarily pursuing the profession. The adult education literature indicates that coercive, strict environments leave the learner no room for independent thought and practice and are counterproductive.[31] Approved clinical instructors should recognize that students in the clinical experience have already acquired a level of knowledge and experience and should be treated with respect.[32] It is not uncommon for students within athletic training education programs to become very competitive with one another. Therefore, ACIs should encourage a spirit of collaboration and friendly competition among student peers.[33] Because adult learners desire active involvement in educational activities,[34] ACIs should purposely plan opportunities for students to practice technical and problem-solving skills.[4,17] In order to facilitate connections between theoretic content taught in the classroom and practical clinical applications, ACIs must create opportunities for critical reflection as a planned feature of clinical education.[4,16-18] They should also encourage and nurture students to develop a sense of self-direction in the clinical learning environment. This will help students decide for themselves what to study and how to manage their study time.[17,21]

Four relevant domains of clinical teaching knowledge have been identified.[32] First, ACIs must be knowledgeable of the subject matter within their field. Knowledge for teaching requires an in-depth and flexible understanding of subject matter. The ACIs need to know content well enough to make connections between the subject matter and their learners. Effective clinical instruction relies on clear connections among skills and concepts from varied sources (personal experience, textbook, and related literature).[32]

Second, ACIs need to be aware of their students' current knowledge.[32] Relating to this principle, the skills-based model of teaching developed by Carkhuff has been recommended for use in the clinical environment.[29] Carkhuff's model of teaching encourages exploration, understanding, and then action.[35] The foundation of this model lies in exploring what the student already knows. The next step requires the ACI to identify the specific knowledge areas that would assist the student in progressing. Finally, the ACI will actively facilitate learning.[35]

Third, in addition to knowledge specific to clinical teaching, ACIs need to know general teaching principles.[32] They should be aware of educational foundations such as the various teaching and learning styles[30,36,37] and the cognitive, psychomotor, and affective taxonomies.[38]

Fourth and most important, ACIs must synthesize their knowledge to develop content-specific pedagogy.[32] When general content knowledge and general teaching methods are transformed into content-specific instruction, new knowledge results for the ACI.[32] This knowledge, developed through teaching experience, is the essence of content-specific pedagogy: content knowledge organized for teaching purposes and comprehensible to particular learners. This is what separates clinical instructors from mere content experts.[32]

Other essential instructional skills for effective clinical teaching identified in the literature include encouraging critical thinking and problem solving, not just recalling facts.[4,39] Approved clinical instructors should provide organized and purposeful clinical instruction using clear educational objectives.[4,16,17] Obviously, ACIs should have a willingness to share knowledge and experiences as well as acknowledge their own deficiencies.[4,18]

Supervisory and Administrative Skills

The ACI should demonstrate effective supervisory skills in the clinical setting. The Joint Review Committee on Educational Programs in Athletic Training in conjunction with CAAHEP has established guidelines regarding direct supervision of athletic training students during their clinical education experiences.[40] The ACIs should be aware of these guidelines and implement them accordingly.

During clinical education supervision, the effective ACI should create a positive environment for the teaching/learning exchange to occur.[17,18,23] Because certain aspects or phases of the clinical experience may become more stressful for students, the ACI should encourage and provide feedback when new and/or difficult clinical situations arise, remaining readily accessible and serving as a resource for students.[4,16-18] However, the ACI must maintain a balance between providing too much feedback and fostering student autonomy.[21,22] The ACI must make a decision, based on the knowledge and experience level of the student, when to withhold feedback and supervision in order to promote confidence and growth in the student's clinical skills. Six major domains of athletic training supervisor behaviors have been identified and could provide guidance for the effective ACI.[22] They involve providing information and technical support, fulfilling supervisory responsibilities, facilitating interpersonal communication, fostering student autonomy, possessing requisite competencies in athletic training domains, and providing a professional model.

The ACIs should also demonstrate effective administrative skills. Many ACIs have responsibilities within the athletic department as well as their associated academic department. Therefore, ACIs must be able to manage their time well and delegate tasks.[17] Potential administrative tasks associated with clinical education include completing clinical evaluation forms for students and documenting their clinical progression in completing the required clinical proficiencies. Clinical instructors also need to conduct productive, timely conferences regarding student performance.[16]

Evaluation of Performance

The ACIs should demonstrate effective evaluation and assessment skills. Evaluation and assessment of student performance is critical to clinical education. Evaluation facilitates the student's pursuit of entry-level competence by informing the student of his or her current level of performance and by identifying strengths and weaknesses compared with specified standards.[41] It provides ACIs with the information necessary to design further quality learning experiences and to modify existing ones. Additionally, evaluation offers academic and clinical information regarding student progress, enabling ACIs to assign student grades, determine whether students have attained entry-level competence, and assess the effectiveness of the academic and clinical curricula.[42]

The overriding consideration in clinical evaluation is whether the student's level of clinical performance is acceptable. Some fundamental rules are in order here:

1. Essential features of clinical performance must be clearly defined by identifying objectives and expectations in advance. Clinical instructors agree that some description of terminal performance is essential to effective evaluation.

2. Evaluation of clinical performance must be done on an individual basis. Because the evaluator must make decisions about each student's competence, each student's achievement must be assessed.

3. The educational objectives, especially those related to clinical performance, must be defensibly related to competence in the health professions and must not merely reflect personal biases.[41]

Additionally, constructive feedback should be frequent and objective.[16] Formative evaluation is specific to a particular situation at a particular time. On the other hand, summative evaluation refers to general feedback about overall performance. In an allied health care profession, the importance of feedback goes beyond good pedagogy; it is necessary for teaching students appropriate patient care.[43] Without feedback, mistakes go uncorrected, good performance is not reinforced, and clinical competence is compromised.[43]

Formative and summative evaluations should be timely, constructive, and documented. The formative evaluation is used to facilitate student self-awareness about specific skills, actions, or behaviors. These evaluations are intended to reinforce good performance or redirect and correct specific deficiencies. Formative evaluation may be presented either informally through verbal remarks or formally (eg, assessment forms)[41] and

should be nonjudgmental.[41,43-45] Summative evaluations, generally the midterm and final clinical evaluations, should be provided formally throughout all clinical rotations.[41] On a general basis, more informal summative evaluation is provided through comments of praise or criticism during the clinical rotation.[42]

It is imperative to realize that the evaluation design is a key component in providing an accurate assessment of student performance.[46] A poorly designed evaluation tool can provide misleading guidance for a clinical student. Students should be fully aware of the standards and criteria their performance is being measured against.

Clinical Skills and Knowledge

The ACIs should demonstrate appropriate clinical competence in the field of athletic training through sound clinical decision making[23] and a systematic approach to problem solving.[17] By virtue of holding and maintaining the certified athletic trainer credential, any certified athletic trainer is clinically competent as measured by the NATA Board of Certification Role Delineation Study: Athletic Training Profession.[47] However, further competence is desired in the 12 educational domains of athletic training indicated in the NATA Athletic Training Educational Competencies[48] listed here:

1. Risk management and injury prevention
2. Pathology of injuries and illnesses
3. [Injury] assessment and evaluation
4. Acute care of injury and illness
5. Pharmacology
6. Therapeutic modalities
7. Therapeutic exercise
8. General medical conditions and disabilities
9. Nutritional aspects of injury and illness
10. Psychosocial intervention and referral
11. Health care administration
12. Professional development and responsibilities

Additionally, ACIs should be able to explain to the student the basis for their actions and clinical decisions.[18] It is also imperative that the ACI be able to demonstrate the appropriate role of the athletic trainer as a part of the health care team.[17]

CONCLUSIONS

Similar to the research[6] regarding clinical education setting standards, we recommend that the standards/criteria developed in this research project for the selection, training, and evaluation of ACIs could be used to foster and augment quality clinical education. They could be helpful in forming and shaping an impression not only about a particular ACI but also about the requirements of clinical education in general. Program directors and CIEs should be guided by these standards to select, train, and evaluate their ACIs in order to help ensure that optimal clinical education is taking place. As a result, the clinical segment of athletic training education can be more carefully designed to prepare students to be sensitive and proficient practitioners for physically active individuals. Failure to objectively select, train, and evaluate the ACIs who supervise students during their clinical field experiences and who provide this clinical education may result in coincidental or chance learning. Such learning is contrary to the purpose and requirements of accreditation, especially regarding the quality of athletic training clinical education. Future researchers should validate these standards/criteria among ACIs representing different types of clinical settings.

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