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ORIGINAL RESEARCH

Improving Preceptor Behavior Through Formative Feedback in Preceptor Training

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Context: Clinical instructor educators (CIEs) prepare athletic trainers (ATs) to serve as preceptors. Structured performance observation and supervisory conferencing is a well-established method to improve teaching practice that may prove effective for training preceptors.

Objective: To explore the impact of a systematic preceptor training program on preceptor behaviors.

Design: Mixed-methods, quasi-experimental, pre-post design using a systematic observational tool for measuring preceptor behaviors, postintervention survey, and focus group interview.

Setting: Two collegiate athletic training facilities.

Patients or Other Participants: Three ATs serving as preceptors (2 men, 1 woman) with 5.7 ± 5.5 years supervising students.

Intervention(s): Preceptor training including a CIE-preceptor planning conference, video-recorded observation session that was coded using an Observational Record of Clinical Educator Behavior (ORCEB) coding form, and CIE-preceptor feedback conference conducted over a 4-week period.

Main Outcome Measure(s): We used the ORCEB to count the frequency of 4 categories of preceptor behaviors demonstrated every 5 seconds during a 30-minute clinical education session. Frequency counts for each category of behavior and percentage of change preintervention to postintervention were calculated. A postintervention survey and focus group interview evaluated perceptions of intervention effectiveness.

Results: Aggregate mean frequency counts for the giving information category increased by 272.8% preintervention (41.7 ± 27.5) to postintervention (155.3 ± 62), evaluating students increased 185.7% preintervention (4.7 ± 8.1) to postintervention (13.3 ± 11.1), and behaviors that promote problem solving increased 257.9% preintervention (6.3 ± 2.3) to postintervention (22.7 ± 13.4). Behaviors that do not promote student engagement decreased 45.1% preintervention (307.3 ± 33.3) to postintervention (168.7 ± 55.8). The survey (4.0–4.7 ± 0.0–0.6) and focus group results support a positive perception on impact of the intervention on the role as preceptor.

Conclusions: Our study supports a systematic training program as a favorable method for increasing effective preceptor behaviors. Limitations of our study include a small sample size and inclusion of only 1 athletic training education program.

Key Words: Conferencing, development, collaboration

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INTRODUCTION

Athletic training is a health care profession that requires hands-on interaction with patients. Without appropriate clinical education, students may develop an adequate knowledge base, but lack the expertise in clinical skills and patient care that are crucial to athletic training practice.[1] Laboratory sessions are helpful for introducing and practicing basic athletic training skills; however, the clinical setting provides the optimal environment for the development and mastery of skills necessary for professional practice.[1,2] Through preceptor and athletic training student interaction, aspects of professional practice, such as interpersonal skills, attitudes, and a broader understanding of the role of athletic trainer may be learned along with skill acquisition and clinical reasoning, further emphasizing the importance of clinical education and the triadic experience between preceptor, student, and patient.[3]

Similar to other health education professionals, athletic trainers receive little pedagogical training in their undergraduate or graduate curricula, and are not formally prepared to instruct students.[3–5] Athletic trainers, however, are often called upon to function in the dual roles of patient care provider and preceptor, although they are hired based on their clinical expertise.[6] The lack of training in pedagogy may affect the preceptor's role as a clinical educator and increase the possibility of role strain as preceptors attempt to balance the expectations of providing athletic training services and teaching athletic training students.[7] Current employment practices often center on hiring athletic trainers who are good practitioners but often lack teaching knowledge and skills to work both clinically and as educators,[3–5] leaving program administrators and faculty responsible for assisting preceptors in learning and using effective teaching behaviors. Several health professions, including athletic training, have attempted to address the issue by providing training and certification for clinical preceptors.[8–10]

The current Commission on Accreditation of Athletic Training Education (CAATE) Standards for the Accreditation of Entry-Level Athletic Training Education Programs mandate that all programs designate a clinical instructor educator (CIE) to provide preceptor training, both initially and at least once every 3 years, designating the content of the initial training session.[11] The new standards, which are effective in 2013–2014, remove the mention of standardized content and timing yet still require preceptors to attend ongoing education to promote an effective learning environment, providing institutional autonomy to athletic training programs (ATPs) to determine how this standard is met.[12]

Previous work in athletic training suggests a low use of effective preceptor behaviors and low levels of actual and student-perceived time in engaged learning.[13] Because of the lack of pedagogical training, preceptors often use familiar or accustomed methods of teaching, linking their preceptor style with their own preferences or experiences.[14] Learned preceptor behavior may not always effectively promote student engagement and may disadvantage the student, as active learning in clinical education is an important component.[13,15] Clinical education is more than just an application of clinical skills; if carried out effectively, athletic training students not only bridge the gap between the classroom and clinical practice, but are prepared to enter the workforce as health care professionals.[15,16] Therefore, there is a need to investigate in-depth preceptor training strategies.

Athletic training can draw from research in teacher education programs that focuses on developing students' preservice teaching practice and competence. Acheson and Gall[17] developed a 3-phase model of clinical supervision, which comprised a planning conference, classroom observation, and feedback conference. This systematic process of clinical supervision emphasizes field experience observation of both student and teacher behavior and the provision of feedback as a means to promote improved teaching.[18] Although this model was originally developed to focus on preservice teachers, we can apply its use to the framework of CIEs engaging in observation and providing structured feedback to preceptors.

It is imperative that our profession develop training methods that foster preceptor effectiveness and improve clinical education delivery. Therefore, the purpose of our study was to examine the impact of a systematic training system based on Acheson and Gall's[17] model of clinical conferencing, observation, and feedback on the frequency of effective preceptor behaviors. We hypothesized that a structured approach to preceptor training would result in an increase in the use of effective preceptor behavior. Our second purpose was to examine preceptors' perceptions of the training process and its impact on their behaviors.

METHODS

Research Design

We used a mixed-method, quasi-experimental, preintervention-postintervention design to examine the effects of a structured preceptor training intervention on the use of effective clinical educator behaviors. We measured observed behavior frequency and assessed preceptor perceptions of the intervention postintervention via survey administration and focus group interviews.

Participants

Three participants (2 men, 1 woman) employed as full-time athletic training faculty members with a split position teaching courses in a CAATE-accredited undergraduate ATP and serving as a preceptor and patient care provider in intercollegiate athletics volunteered to participate in our study. The 3 participants selected represented a convenience sample em-

ployed at the principal investigator's academic institution. The participants were selected because of their active role in working with 1 in-season athletic team (women's volleyball, men's soccer, or women's soccer) at a small private university located in the southern United States at the time the study was conducted. No other athletic teams with full-time staff coverage were participating in season when data collection began. Each preceptor supervised 1 junior-level student and 1 or 2 sophomore-level students, but daily interactions varied depending on student class schedules. Preceptors had to have had a Board of Certification credential for a minimum of 1 year to participate. The participants' preceptor experience ranged from 1 to 12 years (5.7 ± 5.5). All 3 participants had attended an update course focused on strategic questioning and clinical conferencing within 8 months (which varied because of date of hire) of participating in our study. The participants, athletic training students, and patients receiving treatment in the designated facilities listened to an oral presentation and signed a consent form before data collection. The institutional review board approved our study.

Videographers

Two videographers recorded the preceptors when they were engaged in clinical education sessions with athletic training students in the field experience. One videographer was a tenured faculty member in physical education familiar with the use of videography for the evaluation of student physical education teachers and the video equipment (ZR100 Mini DV digital video camcorder; Canon, Miami, FL; and DVM60 premium digital videocassette; Sony, Atlanta, GA). The second videographer was a sport studies graduate student who met with the veteran videographer to train on the use of the video equipment. Before videotaping, both met with the primary investigator to review and discuss the videotaping procedures: (1) arrival time, (2) camera setup and distancing, (3) purpose of videotaping and target subject, and (4) length of videotaping session. Video sessions included 2 different athletic training rooms during prepractice sessions capturing all preceptor activity. By securing individuals not associated with the ATP and instructing them to keep a distance of no closer than 6 feet from the preceptors, the researcher was able to minimize disruption in the clinical setting.

Instruments

We used 2 different measures were used to gauge changes in preceptor behavior and their perceptions of the use of clinical instructor behaviors.

Observational Record of Clinical Educator Behavior. The Observational Record of Clinical Educator Behavior (ORCEB) measured how frequently preceptors demonstrated clinical instructor behaviors. The ORCEB is an observational tool developed by Dondanville[19] for evaluating the use of effective preceptor behaviors when working with students in clinical experiences. An expert panel was used to establish content validity for objective observation (4.6 ± 0.60) and relevance to clinical education (4.40 ± 0.33) and has a good interrater ($r = 0.964$) and intrarater ($r = 0.974$) reliability.[19] The ORCEB has 4 behavior categories with 3 distinct behaviors categorized under each (Table 1).

Dondanville[19] developed the interval recording instrument to assess objectively observable behaviors that were pertinent to athletic training education based on an extensive review of allied health literature relating to effective clinical instructor behaviors and expert review.[19] The resulting interval recording tool, the ORCEB, includes 12 behaviors that can be explicitly defined so that CIEs can accurately and objectively recognize the behaviors reflected in the 4 categories of teaching behavior: (1) give information, (2) evaluate students, (3) promote higher order thinking skills and problem solving, and (4) have physical presence.[19]

Survey. The postintervention survey included both scaled items and open-ended questions (Table 2). The first 2 questions assessed the effect of the 4 components of the preceptor training intervention on positive impact and self-reflection. The third question assessed the CIE role and the same 4 components as a positive learning experience. Open-ended questions following each scaled-item statement asked the preceptor to provide an explanation for which component(s) of the intervention had the most positive impact, and if any components had a negative impact.

Intervention

We used the Acheson and Gall[17] Clinical Supervision Model to train preservice teachers as a format for ongoing preceptor training. Participants were videotaped for 30 minutes during a preintervention clinical education session that included prepractice patient preparation for each observational session. This 30-minute videotaped session was coded by the principal investigator at least twice for each session, using the ORCEB coding form at 5-second intervals for all behavior categories to record baseline behaviors and to assure accuracy of coding. The preceptor training intervention included repeated CIE-preceptor planning conferences (reflection and goal setting), field observations (video recording and coding), and CIE-preceptor feedback conferences (review of ORCEB data, stimulated recall, and reflection), with each cycle focusing on 1 behavior category: (1) physical presence; (2) information giving; (3) student evaluation; and (4) problem solving and critical thinking. The CIE had been employed at the university and served as the ATP clinical coordinator for 15 years in a dual position of clinical athletic trainer and teaching faculty.

The Planning Conference. Each conference began with a conversation between the CIE and preceptor to clarify perceptions in relation to the process, personal concerns, needs, and preceptor aspirations in relation to clinical educator practice/skills specific to the behavior category selected.[17,20,21] The discussion centered on illuminating a clear picture of the preceptor's current teaching practice and what was perceived to be ideal.[17,21] The CIE used facilitative questioning to encourage reflective thinking on preceptor behavior (eg, "You emphasize critical thinking as a priority goal you set for students. Describe to me an interaction you had with a student that helped to encourage critical thinking").[21] Next, an exploration of techniques (eg, "If your goal is to foster critical thinking by the student, what methods do you use to address this objective?") was carried out to address areas in need of improvement, calling for the preceptor to reflect on current practices and the effectiveness of instructional performance and translate concerns into observable behaviors.[17,21] Once an agreement was reached on the preceptor's current level of practice, clear goals were collaboratively set (eg, "In order to encourage the student to

Table 1. Coding Definitions[a]

Behavior Category and Code	Definition
Teaching behaviors that give information	
E	The preceptor either gives an **explanation** of the material, offers a verbal example to clarify student understanding, or responds to a student question
D	The preceptor **demonstrates** a skill for the student
A	The preceptor refers a student to educational **aids** or research opportunities
Teaching behaviors that evaluate students	
C	The preceptor offers specific **corrective** feedback that is timely and relevant (eg, "Next time try to overlap your tape strips by at least half an inch")
F	The preceptor offers specific positive **feedback** (eg, "Your heel locks were better that time because they had fewer wrinkles")
P	The preceptor offers general **praise** for good work (eg, "Good job")
Questioning behaviors that promote problem solving and critical thinking	
L	The preceptor asks a **low-level** question to ascertain a student's basic understanding of a subject (eg, knowledge or comprehension; "What are the 3 main ligaments in the lateral ankle?")
H	The preceptor asks a **high-level** question that stimulates critical thinking and problem solving (eg, analysis, synthesis, or evaluation; "What might be an appropriate exercise for the rehabilitation of a grade 2 sprain at day 3 postinjury, given that PROM is still limited and painful but the athlete can weight bear?"
S	The preceptor is not interacting with students, but 2 or more students are independently engaged in peer coaching or learning activities (eg, skill practice, **study** behaviors)
Physical presence at the clinical site	
T	The preceptor provides direct patient care **without** interacting with a student (ie, no explanation or demonstration)
X	The preceptor engages in behaviors **unrelated** to clinical education (eg, unrelated conversations, works in the office)
O	The preceptor is in close proximity to and **observes** or monitors a student's skills practice or patient interaction

Abbreviation: PROM, passive range of motion.
[a] Bold type indicates the primary descriptor of the behavior category.

Table 2. Preceptor Postintervention Survey

Scaled Item Question and Components	Open-Ended Question
This component of the preceptor intervention had a positive impact on my role as preceptor	Which component(s) had the greatest positive impact? Please explain how they had a positive impact.
Conferencing Goal setting ORCEB data Stimulated recall	Did any of the components of the preceptor intervention have a negative impact on your role as preceptor? If so, which ones, and how did they have a negative impact?
This component of the preceptor intervention encouraged me to use self-reflection in my role as preceptor.	Which component(s) had the greatest positive impact? Please explain how they had a positive impact.
Conferencing Goal setting ORCEB data Stimulated recall	Did any of the components of the preceptor intervention discourage you from using self-reflection on your role as preceptor? If so, which ones, and how did they discourage self-reflection?
This component of the preceptor intervention resulted in positive learning experiences.	Which component(s) had the greatest positive impact? Please explain how they had a positive impact.
Conferencing Goal setting ORCEB data Stimulated recall Role of CIE	Did any of the components of the preceptor intervention result in negative learning experiences? If so, which ones, and how did they result in negative learning?

Abbreviations: CIE, clinical instructor educator; ORCEB, Observational Record of Clinical Educator Behavior.

think critically, focus will be placed on using open-ended questions appropriate to the student's level of knowledge and provide positive specific feedback").[17,20,21]

The planning conference did not require a large time commitment, taking only 20 to 30 minutes for the initial conference, with follow-up sessions lasting approximately 5 to 10 minutes each.[17,21] The conference was held at a neutral site, to avoid preceptor intimidation and keep the atmosphere friendly and amenable to open discussion without the fear of evaluation.[17,18,20]

Fieldwork Observation. During this phase, we used direct methods of observation[17] to provide preceptors with performance indicators. We videotaped the preceptor and used the ORCEB to determine the frequency of use of behaviors agreed upon during the planning conference to provide data during the feedback conference.

The Feedback Conference. During this phase, the CIE and preceptor viewed a portion of the recorded observational session using a process of stimulated recall wherein the preceptor paused the videotape to reflect upon preceptor skills. The CIE and preceptor then collaborated in interpreting the data from the ORCEB, looking for probable causes and consequences of observed behavior, and discussed possible alternatives for encouraging active learning and more student involvement.[17] For example, data may indicate that a preceptor spent 40% of the clinical experience providing patient care with no student interaction. Although observation provides some learning opportunity, if the experience does not include active learning, the student is likely to become bored and uninterested.[5,22] These changes in teaching practice initiate the discussion of new goals and restart the clinical conferencing cycle with a new planning phase.[17]

Procedures

There were 3 defined stages in the procedures: (1) preintervention, (2) intervention, and (3) postintervention (Table 3). Table 4 matches the data collection technique to its purpose and timeline.

Before videotaping, the principal investigator met with the preceptors and videographers to schedule dates, times, and locations for videotaping. The videotaping occurred over a period of 6 weeks in order to stagger videotaping sessions and allow for a 4-week intervention with each preceptor. The original plan allowed for 5 to 6 days in between videotaping sessions. Because of the fluctuating nature of athletics practice times, schedule changes resulted in shifting the dates and times, allowing for only 3 to 6 days between videotaping sessions.

To provide the preceptors feedback during their conferences, we used the ORCEB to assess their use of effective preceptor behaviors from the videotaped field experience sessions. The primary investigator coded each taped session at least twice, until a minimum of 90% agreement was reached, to ensure coding accuracy. Frequency counts of each behavior category were calculated and provided preintervention and postintervention measures to compare for any change in the use of the effective preceptor behaviors after the preceptors underwent the training intervention.

Table 3. Defined Stages of Preceptor Intervention

- Stage 1—preintervention
  - Preintervention informational group meeting
  - Preintervention evaluation
    - ORCEB
- Stage 2—intervention
  - Planning conference
    - Goal setting
      - Stage 2—physical presence
      - Stage 3—information giving
      - Stage 4—student evaluation
      - Stage 5—problem solving and critical thinking
  - Field observation
    - Videotape/ORCEB
  - Feedback—conference
    - Stimulated recall
    - Reflection
    - Set goals for next stage
- Stage 3—Postintervention
  - Postintervention evaluation
    - ORCEB
    - Postintervention survey
    - Postintervention focus group intervention

Abbreviation: ORCEB, Observational Record of Clinical Educator Behavior.

Stage 1: Preintervention. During stage 1, preceptors attended a 30-minute informational session to explain the preceptor training intervention (the stages, process, and preceptor role). Stage 1 also involved a pre-evaluation of each preceptor's behaviors using the ORCEB. This information provided baseline data for the planning session in stages 2 through 5 of the intervention.

Stage 2: Intervention. Stage 2 was comprised of 4 weeks that repeated a 7-day circular conferencing-action-reflection pattern to improve the use of preceptor behaviors. Each week began with an individual meeting to discuss preceptor goals in relation to that week's target behavior category. Participants reviewed the preintervention videotape and ORCEB results with the investigator to make collaborative decisions regarding goals and implementation strategies related to that week's target behavior category. After the planning session, each preceptor spent the remainder of the week implementing the target behaviors into his or her clinical education practice. At the end of this period, they were videotaped again, and their preceptor behaviors relating to the target behavior were coded using the ORCEB. This information provided the data for stimulated recall and reflection for the end-of-week feedback conference session. The target behaviors were implemented in the following order: physical presence (week 1), information giving (week 2), evaluating students (week 3), and critical thinking (week 4).

Stage 3: Postintervention. The final field observation (week 4) videotaped session was coded using the ORCEB for all 4 behavior categories and shared with each preceptor during his or her final feedback conference 1 week postintervention. These results were used in the data analysis to compare preintervention and postintervention behavior use. A

Table 4. Data Collection Technique, Purpose, and Timeline

Technique	Purpose	Timeline
ORCEB	Record of actual preceptor behavior during the clinical field experience (throughout the intervention)	Preintervention and postintervention and for each specified behavior category throughout the intervention
Video recording	Audiovisual record of actual preceptor behavior to be used during the stimulated recall sessions (during the intervention stage) and for coding of the behaviors using the ORCEB	Preintervention and postintervention and for each specified behavior category throughout the intervention
Focus group interview with preceptors	Gain insight to perceptions relating to the intervention and its impact on clinical education and reflection	Postintervention
Preceptor postintervention survey	Gain insight to perceptions relating to the intervention and its impact on clinical education and reflection	Postintervention

Abbreviation: ORCEB, Observational Record of Clinical Educator Behavior.

postintervention survey was also administered to the 3 participants immediately before a semistructured focus group interview to encourage reflection on their experiences participating in this preceptor training intervention and its impact on their role as a clinical instructor. The focus group interview and survey administration occurred approximately 8 weeks after the intervention because of preceptor end-of-semester responsibilities and semester break**.** We audio recorded the focus group interview using a Sony ICD-P520 recorder and concluded after 20 minutes when participants began to repeat previous comments and had no new information to add. Questions focused on the preceptors' perceptions of how the intervention may have impacted their preceptor behavior (Appendix).

Data Analyses

Observational Record of Clinical Educator Behavior. Frequency counts were aggregated along with the associated means and standard deviations across behavior categories preintervention and postintervention to investigate the effects of the preceptor training intervention on the use of effective preceptor behaviors.

Survey. The scaled items on the survey were converted from descriptors (*strongly disagree* to *strongly agree*) to a numeric value (*strongly disagree* = 1, *strongly agree* = 5). Mean scores and standard deviation were calculated for each component (conferencing, goal setting, ORCEB data, and stimulated recall) relating to preceptor perception of the intervention as having a positive impact, promoting self-reflection, and being a positive learning experience. Open-ended questions were analyzed by categorizing responses into overarching themes.

Focus Group. The questions posed during the semi-structured interview explored preceptor perceptions of how the intervention affected their clinical educator behavior. A professional transcriber used the Sony Digital Voice Editor software to transcribe the focus group audio recording. The transcriptions were line numbered and coded separately by a second graduate student in the sport studies program, also serving as an athletic training intern, and the principal investigator. The principal investigator met with the graduate student before transcription to explain the open coding process and provide the research questions. Data examination focused on categories related to effective clinical education practice, the clinical supervision intervention, and reflective practice. The data were reviewed several times individually, with reviewers looking for emergent categories by comparing statements for similarities and differences. The process repeated until each coded excerpt had been categorized and no new categories emerged. The principal investigator and graduate student met to compare results, negotiate themes, and code specific excerpts. Each of us reviewed the final coding 1 final time to determine if any changes were necessary. Member checks were conducted after the analyses by sharing the findings with the participants to allow for participant commentary and affirm the accuracy of the analyses.

Together the ORCEB, survey, and focus group provided triangulation to describe changes in the use of effective preceptor behavior. The analyses also provided insight into preceptor perceptions of the learning outcomes from a structured preceptor training intervention.

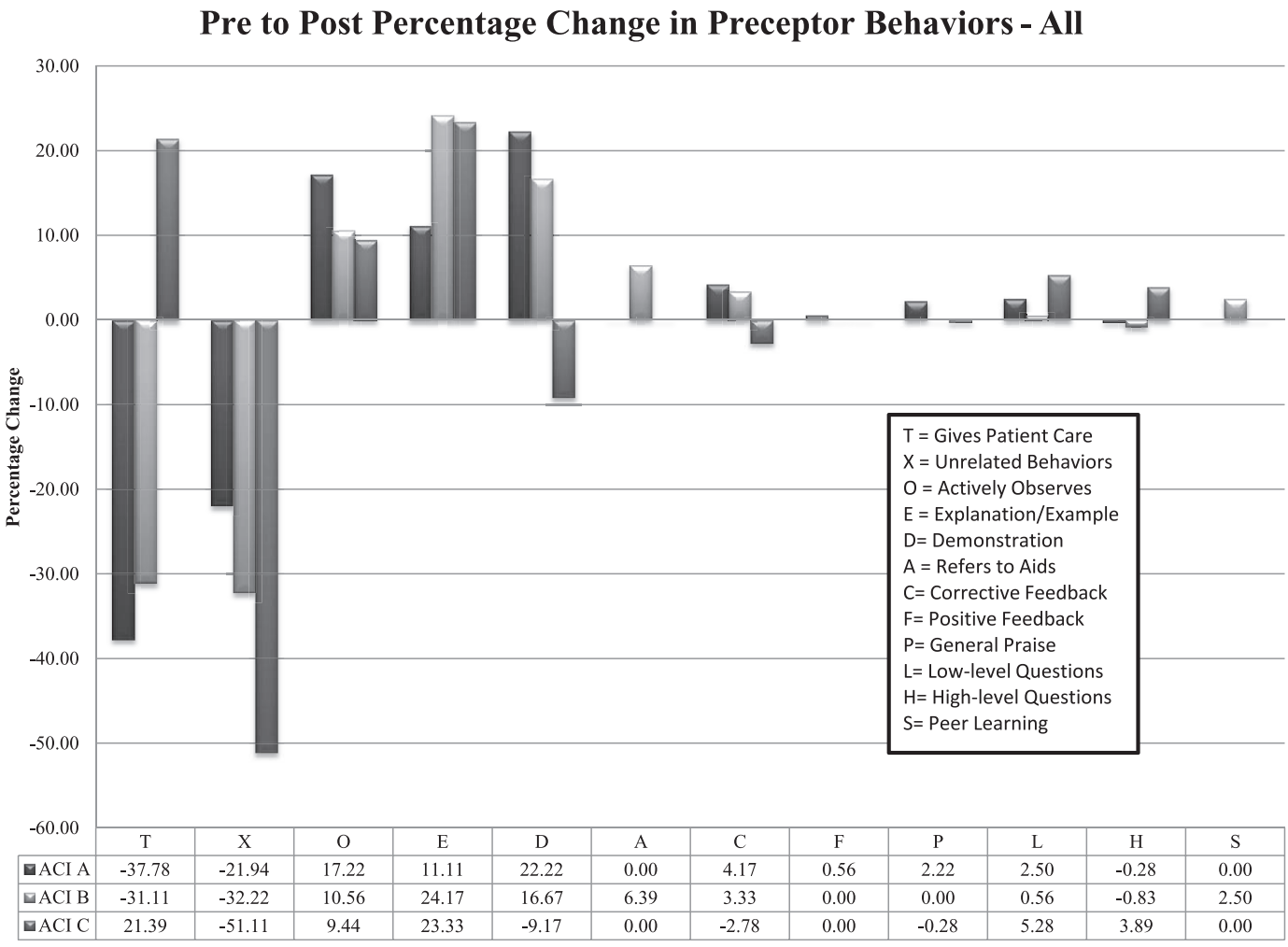
RESULTS

Observational Record of Clinical Educator Behavior

A preintervention to postintervention comparison of the preceptor ORCEB results demonstrated some similar trends. All 3 participants had larger increases in observation (O), explanation (E), and low-level questioning (L), with minor increases in other behavior categories (aids [A], corrective feedback [C], positive feedback [F], general praise [P], high-level questioning [H], and peer learning [S]). Two of the participants also had greater increases in demonstration (D), with 1 preceptor increasing the time spent in patient care without student interaction (T), going from 0.00% to 21.39%. All 3 preceptors demonstrated a large decrease in their use of unrelated behaviors (X), and minor decreases in other areas (D, C, P, and H; Figure).

Evaluation of aggregate mean frequency counts revealed large increases across categories that promote student learning and

Figure. Preintervention to postintervention change in preceptor behaviors.



	T	X	O	E	D	A	C	F	P	L	H	S
ACI A	-37.78	-21.94	17.22	11.11	22.22	0.00	4.17	0.56	2.22	2.50	-0.28	0.00
ACI B	-31.11	-32.22	10.56	24.17	16.67	6.39	3.33	0.00	0.00	0.56	-0.83	2.50
ACI C	21.39	-51.11	9.44	23.33	-9.17	0.00	-2.78	0.00	-0.28	5.28	3.89	0.00

a decrease in behaviors that do not promote student engagement. Individual preceptor frequency counts reflected similar results with the exception of preceptor 3, who decreased in the category of student evaluation by 78.6% (Table 5).

Survey

Scaled Items—Question 1. "This component of the preceptor intervention had a positive impact on my role as a preceptor." Two *strongly agree* responses and 1 *agree* response were recorded for both conferencing and ORCEB data. Stimulated recall and goal setting each received 3 *agree* responses.

Scaled Items—Question 2. "This component of the preceptor intervention encouraged me to use self-reflection in my role as preceptor." One preceptor responded *strongly agree* in reference to goal setting, ORCEB data, and stimulated recall. The remaining 2 preceptors varied in response. One responded *agree* to both ORCEB data and stimulated recall and *neutral* in reference to goal setting, and the other marked *agree* to goal setting and ORCEB data and *neutral* in reference to stimulated recall. All 3 preceptors responded *agree* in relation to conferencing.

Scaled Items—Question 3. "This component of the preceptor intervention resulted in positive learning experiences." Stimulated recall, conferencing, and role of CIE all received 2 *strongly agree* and 1 *agree* responses, and goal setting and ORCEB data received 1 *strongly agree* and 2 *agree* responses.

The survey results support an overall positive preceptor perception on the impact of the intervention on role as a preceptor (4.53 ± 0.15), as a mechanism for promoting self-reflection (4.18 ± 0.4), and for fostering a constructive learning experience (4.5 ± 0.6) with mean scores across intervention components ranging from 4.0 to 4.7 (±0.0–1.0; Table 6).

Open-Ended Questions. In order to help assess the effectiveness of the preceptor training intervention based on perception, open-ended questions following each scaled-item statement asked the preceptor which component of the intervention had the most positive impact as related to each of the areas assessed (role as preceptor, encouragement to promote self-reflection, and promotion of a positive learning experience), and if any components had a negative impact. All preceptor responses to the questions seeking negative interpretations either were left blank or had a response of "no" or

Table 5. ORCEB Results[a]

	PRE	POST	Mean PRE	SD PRE	Mean POST	SD POST	% Change[b]
Giving information	125	466	41.7	27.5	155.3	62.0	272.8
P1	10	130					1200.0
P2	56	226					303.6
P3	59	110					86.4
Student evaluation	14	32	4.7	8.1	10.7	7.1	200.0
P1	0	17					1700.0
P2	0	12					1200.0
P3	14	3					−78.6
Promoting problem solving and critical thinking	19	68	6.3	2.3	22.7	13.4	257.9
P1	5	13					160.0
P2	9	17					88.9
P3	5	38					660.0
Behaviors that don't promote student engagement	922	506	307.3	33.3	168.7	55.8	−45.1
P1	345	192					−44.3
P2	295	105					−64.4
P3	282	209					−25.9

Abbreviations: ORCEB, Observational Record of Clinical Educator Behavior; P, preceptor; POST, postintervention; PRE, preintervention.
[a] Data are presented as behavior frequency counts.
[b] Percentage change in frequency count.

"N/A" included in the response area. Two preceptors cited the ORCEB data as having the greatest effect on positive impact on preceptor behavior, and 1 referenced conferencing and the role of CIE as most important. Two preceptors also indicated that the ORCEB data had the greatest effect on self-reflection, and 1 cited stimulated recall. Furthermore, 2 preceptors cited the role of the CIE as having the greatest effect on positive learning experiences, and the ORCEB data, goal setting, and stimulated recall were each reported by 1 preceptor (Table 7).

Focus Group Interview. The inclusion of qualitative comments provided a third method for evaluating the effects of the preceptor training intervention on preceptor behavior. We identified themes when a common idea was supported by at least 3 comments. The focus group results identified 6 themes: (1) conferencing, (2) videotaping, (3) perception of teaching, (4) behavior change, (5) preceptor-student engagement, and (6) role strain. Three subthemes were also identified under 2 themes: (1) conferencing—importance of use; (2) videotaping—stimulated recall; and (3) videotaping—barriers to use (Table 8).

The preceptors appear to value the collaborative feedback, reflection, and goal setting that was inherent to the preceptor training intervention. Specifically, they felt it provided them with realistic and objective feedback on their preceptor behavior, allowed for discussion and exploration of strategies to improve their preceptor delivery, and helped balance their dual roles. Collectively, the outcomes expressed by the preceptors supported their desire to continue to participate in the preceptor training process in the future.

DISCUSSION

Structured preceptor training increased the use of positive behaviors while decreasing the use of behaviors that did not actively engage the student. The intervention had positive impact on preceptor development.

Need for a Structured Clinical Supervision Program

Athletic trainers are often hired in the dual role of athletic trainer and preceptor based on their athletic training qualifications, with little background or training in teaching.[4,6] Several studies have shown low use of effective preceptor behaviors, ranging from 7% to 24% in instructional behaviors to 25% to 30% in perceived active learning.[13,15,19] Although these studies did not investigate the impact of preceptor training on clinical education, the average percentages of time spent using effective preceptor behaviors were similar to that found in our preintervention ORCEB results (14.6%).

Table 6. Postintervention Survey Results[a]

	Positive Impact	Self-Reflection	Positive Learning Experience
Conferencing	4.7 ± 0.6	4.0 ± 0.0	4.7 ± 0.6
Goal setting	4.0 ± 0.0	4.0 ± 1.0	4.3 ± 0.6
ORCEB	4.7 ± 0.0	4.7 ± 0.6	4.3 ± 0.6
Stimulated recall	4.7 ± 0.0	4.0 ± 0.0	4.7 ± 0.6

Abbreviation: ORCEB, Observational Record of Clinical Educator Behavior.
[a] Likert scale: 1 = *strongly disagree*, 5 = *strongly agree*.

Table 7. Survey Open-Ended Question Responses

Category	Components	Preceptor Statements
Role as preceptor	ORCEB data	ORCEB—"provided concrete numbers that corresponded to actual clinical behaviors."
	Conferencing and goal setting	ORCEB—"challenged perceptions and realities."
		ORCEB—"data pointed out the amount of time I was spending on each category."
		Conferencing and goal setting—"pointed out weakness, but were able to talk about ways to improve."
Self-reflection	ORCEB data	ORCEB—"after looking at the numbers I would think back to the event and realized things I was and wasn't doing."
	Stimulated recall	ORCEB—"gave me a reminder for point of focus for clinical instruction. Thinking about categories made me think of teaching behavior."
		Stimulated recall—"allowed me to visually reflect on my preceptor responsibilities and was able to change my outlook on how I conduct treatments and interact with the students."
Learning experiences	Role of CIE and goal setting	Role of CIE—"provides objective input/evaluation of teaching performance. Help bridge a connection between."
	ORCEB and stimulated recall	Role of CIE—"helped give suggestions and strategies to correct behaviors that were highlighted."
		ORCEB and stimulated recall—"gave me suggestions on how to provide students with a better learning environment."

Abbreviations: CIE, clinical instructor educator; ORCEB, Observational Record of Clinical Educator Behavior.

Clinical education is the key that connects theory to practice in athletic training and other medical-allied health fields, and has become a central focus in athletic training education.[23,24] Although selection and evaluation of preceptors is important, it is equally important to find ways to train preceptors to ensure that appropriate clinical education is occurring. [8,10,23] Preceptors participating in our study recognized the inconsistency between their perceived and actual use of preceptor behaviors. A systematic approach using conferencing and formative feedback supports the preceptor when addressing areas of weakness and formulating new methods of effective clinical education delivery.

Active Engagement in Clinical Education

Although there are no set norms for the amount of time a preceptor should spend actively engaging the athletic training student, studies consistently demonstrate that only 7% to 30% of a student's clinical experience is spent engaged, implying that strategies for engaging students should be a major focus of preceptor training.[13,15,19] Clinical instructor educators need to do more to educate preceptors on appropriate teaching behaviors that are not limited to only directly supervised experiences, but lend themselves to supervised autonomy through the fostering of critical thinking through questioning and feedback.[25]

Feedback in clinical education is an important catalyst in the development of student knowledge, skill, and professionalism,[26–31] and involves giving students information to improve performance through informal formative assessments centered on an objective appraisal of student performance.[26–29] Appropriate feedback includes both corrective (advice on improving performance when something is incorrect) and directive (guidance on refining or clarifying knowledge or performance) feedback.[19,26,27] Other key components for providing effective feedback are to use immediate feedback when possible, provide detail, reflect on observed behaviors, use nonjudgmental delivery, give an appropriate amount of feedback, and make suggestions for improvement.[26–29]

Our study found that provision of feedback by preceptors accounted for only 1.30% of the total preintervention behavior count (14 of 1080 behavior counts), but improved by 185.7% (40 of 1080) after the preceptor training intervention. These results support ongoing preceptor training as an effective tool for increasing preceptor feedback.

Clinical Experience and Clinical Educator Behavior

Physical presence at the site is perhaps the easiest category of preceptor behaviors to exhibit; however, it is the 1 category that does not promote active learning, and thus, low levels are desirable. The remaining 3 overarching categories (information, evaluation, and questioning) all promote clinical education through active learning experiences.[19]

The ORCEB results supported the hypothesis that participation in a structured preceptor training program increases preceptor use of effective behaviors, as all 3 preceptor participants decreased the use of behaviors in the physical presence category and increased the percentage of time using the remaining behavior categories, with the exception of preceptor 3 in the student evaluation category. This variance may be explained by the large increase of frequency in the category of promoting problem solving and critical thinking (660.0%). It was interesting, but not surprising, to note that the least experienced preceptor (preceptor 1), while spending less time in unrelated behaviors, spent a majority of time (56.6%; 204 of 360 behavior counts), preintervention giving patient care without student interaction, and overall yielded the highest total percentage of time spent in physical presence (95.8%; 345 of 360). In contrast, the most experienced preceptor's (preceptor 3) preintervention use of effective

Table 8. Focus Group Themes and Subthemes

Theme	Subtheme	Supporting Comments
Conferencing	Importance of use	"... something gets lost in the translation if you just give numbers ... there were times when the numbers needed a little explanation ... numbers by itself wasn't enough." "I thought the goals were important ... it gave me something to focus on the next time versus just walking in and just doing whatever." "It gave you intentionality with what your purpose was going to be ... there was something concrete that gave me a target oriented to go for ..."
Videotaping	Stimulated recall	"Seeing myself on video was very eye opening ... when you actually see your own body language and the way you speak and interact with a student I thought was helpful ... was very revealing." "Seeing the video explained the numbers." "... it's like almost instantaneously things started to come back to me in terms of what was going on. My memory recall of what happened was more in tune.
Videotaping	Barriers to use	"... being watched by a camera, it just made you very self-conscious of what activities you were doing or not doing. "... felt kind of negative in the sense I felt kind of hot under the collar." "My behavior changed when I was on camera and new that was the day I was being taped."
Perception of teaching	None	"I was under the impression that, just because I was engaging, that I was probing but I wasn't." "... it was completely off my radar in terms of that's the style, this is my natural style of doing things and that I might have to change my natural style to accommodate a better learning situation for a student." "I think it was just easy to lapse into clinical instruction is just supervising students as they're doing things and just simply correcting them when they are doing something wrong, versus doing something that's educational ...my perception has changed dramatically." " ...my perception of some of the things I do was one way, and then actually seeing myself on tape and talking, like there were some things that clicked or registered."
Behavior change	None	"Looking at the video and raw numbers, I started changing things." "I made the students use their critical thinking skills, but nothing like I do now. "I used to literally sit back and watch them, you know, perform their tasks and everything." "I took some of the old stuff I had and I added what I learned for myself going through this process."
Preceptor-student engagement	None	"... it came quite clear to me that I have a good instructional style but it lacks in terms of engaging them in a way that gets them more active ... I do more information dissemination than I do probing and getting them interactive." "I saw positive feedback from the students when I was engaged with the learning experience during treatments." "actually using that time for casual instruction and reinforcing based on what they remember and what they had difficulty with versus just hanging out, socializing, waiting for an athlete to come in."
Role strain	None	"... you were constrained with having to provide athletic training services to so many bodies, that it gets cumbersome, you're in tension between trying to do athletic service and instruction ..." "I had baseball athletes come in and I was working with volleyball ... I would just work solely with baseball and my students would work with volleyball." "... means you sacrificing the other, or to do well on the other it means you're sacrificing in the other direction ... it's hard to find balance."

preceptor behaviors was slightly higher (21.7%; 78 of 360) than that of either preceptor 2 (18.6%; 67 of 360) or preceptor 1 (4.2%; 5 of 360). The results may also have been affected by the 0.0% of time spent in direct patient care without student interaction because of low patient volume, thereby decreasing the total amount of time spent in the physical presence category during the preintervention fieldwork observation. "Without specific training in educational methods, preceptors may be less efficient and effective in their teaching."[32(p1044)] Therefore, it is important for CIEs to recognize that longevity as an athletic trainer does not determine competence as a preceptor.

Limitations

Our study was limited in several ways. Even though the videographers were instructed to remain a minimum of 6 feet from the participants, the presence of a video camera may have influenced participant behavior and inflated the behavior changes pretesting to posttesting. This close distance was required to capture the audio feed because the available video equipment did not support an external microphone. The use of videotape, however, was a necessity to document and accurately code preceptor behavior. The observational recording tool (ORCEB) required coding of 12 different preceptor behaviors every 5 seconds, a difficult task done live. The available pool of qualified preceptors supervising athletic training students at the time of the study was also small. It is unknown if similar results would have been seen if a larger sampling from more than 1 athletic training education program had been studied. Although we used a semistructured interview guide, the low number of participants reduced the amount of time spent by individuals discussing the questions posed by the researcher. The brief focus group interview duration, 20 minutes, may be due to the nature of the participants' jobs, which created an environment in which concern about returning to work responsibilities possibly resulted in shorter responses. Individual personalities also affected the participant interaction/response to posed questions. Because of the end-of-semester preceptor job responsibilities and semester break, it was not possible to schedule a time that all 3 participating preceptors could meet for the postintervention survey and focus group interview until approximately 8 weeks after the intervention ended. This may have potentially affected preceptor recall of their perceptions at the time of the intervention.

CONCLUSIONS

The structured preceptor training intervention was perceived as having a positive impact on preceptor behaviors by participating preceptors because it cultivated reflection and an objective and realistic evaluation of actual clinical education practice and encouraged a collaborative and supportive approach in developing and adopting more effective preceptor methods. Participating in a clinical supervision model for training preceptors is a time-demanding task. The CIE must be intentional in scheduling all aspects of conferencing (planning conference, field observation, and feedback conference). Depending on the level of preceptor ability, less time may be needed when meeting with more accomplished preceptors. This method may be more beneficial to use with novice or less accomplished preceptors. It should be noted that as the CIE and preceptors become more accustomed to the conferencing process, less time will be needed for each session.

Although workshops and evaluation tools provide appropriate learning and reflective opportunity, they do not offer the same benefits as ongoing preceptor education, self-reflection, and evaluation autonomy that can be nurtured through active preceptor training. Therefore, we suggest that time devoted to continual preceptor training is well worth the effort in terms of preceptor development, athletic training students' clinical education, and, ultimately, service to student-athletes. Future research should include case studies using the preceptor training method, studies that evaluate student and preceptor perceptions pre– and post–preceptor training, and use of the preceptor training methods using peer observation and feedback.

REFERENCES

1. Knight KL. Clinical education: we aren't there yet, but we're making progress. *Athl Ther Today*. 2002;7(5):1.
2. Peer K. Seven principles to good practice: a foundation for effective clinical education. *Athl Ther Today*. 2003;8(6):50–52.
3. Weidner TG, Henning JM. Being an effective athletic training clinical instructor. *Athl Ther Today*. 2002;7(5):6–11.
4. Toburen KR. Clinical education. *J Athl Train*. 2002;37(4 suppl): S-220–S-221.
5. Weidner TG, Pipkin J. Clinical supervision of athletic training students at colleges and universities needs improvement. *J Athl Train*. 2002;37(4 suppl):S-241–S-247.
6. Weidner TG, Henning JM. Development of standards and criteria for the selection, training, and evaluation of athletic training approved clinical instructors. *J Athl Train*. 2004;39(4): 335–343.
7. Henning JM, Weidner TG. Role strain in collegiate athletic training approved clinical instructors. *J Athl Train*. 2008;43(3): 275–283.
8. Hancox K, Lynch L, Happell B, Biondo S. An evaluation of an educational program for clinical supervision. *Int J Ment Health Nurs*. 2004;13(3):198–203.
9. Gwyer J, Odom C, Gandy J. History of clinical education in physical therapy in the United States. *J Phys Ther Educ*. 2003; 17(3):34–43.
10. Hesketh E, Bagnall G, Buckley E. A framework for developing excellence as a clinical educator. *Med Educ*. 2001;35(6):555–564.
11. CAATE. Standards for the accreditation of entry-level athletic training education programs. 2008. http://www.caate.net.
12. CAATE. Draft—standards for the accreditation of educational programs for the professional preparation of the athletic trainer. 2012;7:4–18.
13. Berry DC, Miller MG, Berry LM. Effects of clinical field-experience setting on athletic training students' perceived percentage of time spent on active learning. *J Athl Train*. 2004; 39(2):176–184.
14. Levy LS, Gardner G, Barnum M, Willeford S, Sexton P, Guyer S. Situational supervision for athletic training. *Athl Train Educ J*. 2009;4(1):19–22.
15. Miller MG, Berry DC. An assessment of athletic training students' clinical-placement hours. *J Athl Train*. 2002;37(4 suppl):S-229–S-235.
16. Nolan CA. Learning on clinical placement: the experience of six Australian student nurses. *Nurs Educ Today*. 1998;18(8):622–629.

17. Acheson KA, Gall MD. *Techniques in the Clinical Supervision of Teachers: Preservice and Inservice Applications*. 2nd ed. New York, NY: Longman; 1987.
18. Kent SI. Supervision of student teachers: practices of cooperating teachers prepared in a clinical supervision course. *J Curriculum Superv*. 2001;16(3):228–244.
19. Dondanville A. *Assessing Effective Teacher Behaviors in Athletic Training Clinical Education* [dissertation]. Greensboro, NC: University of North Carolina; 2005.
20. Sloan G. Clinical supervision: beginning the supervisory relationship. *Br J Nurs*. 2005;14(17):918–923.
21. Studer JR. Supervising school counselors-in-training: a guide for field supervisors. *Professional School Counseling*. 2005;8(4):353–359.
22. Morgan S. Teaching activities of clinical instructors during the direct client care period: a qualitative investigation. *J Adv Nurs*. 1991;16(10):1238–1246.
23. Weidner TG, Henning JM. Importance and applicability of approved clinical instructor standards and criteria to certified athletic trainers in different clinical education settings. *J Athl Train*. 2005;40(4):326–332.
24. Aiken F, Menaker L, Barsky L. Fieldwork education: the future of occupational therapy depends on it. *Occup Ther Int*. 2001;8(2):86–95.
25. Sexton P, Levy LS, Willeford S, et al. Supervise autonomy. *Athl Train Educ J*. 2009;4(1):14–18.
26. Barnum M. Questioning skills demonstrated by approved clinical instructors during clinical field experiences. *J Athl Train*. 2008;43(3):284–292.
27. Nottingham S, Henning JM. Provision of feedback to students, part 1: overview of strategies. *Athl Ther Today*. 2010;15(5):19–21.
28. Ende J. Feedback in medical education. *JAMA*. 1983;250(6):777–781.
29. Thomas JD, Arnold RM. Giving feedback. *J Palliat Med*. 2011;14(2):233–239.
30. Archer J. State of the science in health professional education: effective feedback. *Med Educ*. 2010;44(1):101–108.
31. van de Ridder JM, Stokking KM, McGaghie WC, Ten Cate OT. What is feedback in clinical education. *Med Educ*. 2008;42(2):189–197.
32. Molodysky E. Clinical teacher training: maximizing the "ad hoc" teaching encounter. *Aust Fam Physician*. 2007;36(12):1044–1046.

Appendix. Semistructured Interview Plan—PRECEPTOR Focus Group

1. Overall during participating in the clinical supervision program, what aspects do you believe had a positive or negative influence on your role as a PRECEPTOR?
   - Conferencing?
   - Goal setting?
   - ORCEB [Observational Record of Clinical Educator Behavior] data?
   - Stimulated recall?
2. Overall during participating in the clinical supervision program, what aspects do you believe did or did not influence self-reflection in relation to your role as a PRECEPTOR?
   - Conferencing?
   - Goal setting?
   - ORCEB data?
   - Stimulated recall?
3. Describe a moment during the clinical supervision program where you felt you "learned" something.
   - What factors influenced that experience?
   - What was unique about that moment?
   - What actions or behaviors did you, the PRECEPTOR, contribute to that moment?
   - What actions or behaviors did the CIE [clinical instructor educator] contribute to that moment?
4. Overall after participating in the clinical supervision program, describe what components of the program created positive learning experiences and which aspects created negative learning experiences?
   - Conferencing?
   - Goal setting?
   - ORCEB data?
   - Stimulated recall?
   - Role of CIE?

Pre– versus Post–Clinical Supervision Program

1. Describe how your perceptions of effective PRECEPTOR behavior have changed after participating in the clinical supervision program.
   - What were your previous perceptions? What are your current perceptions?
   - What factors do you believe influenced the change?
2. Describe how your PRECEPTOR behaviors have changed after participating in the clinical supervision program.
   - What behaviors did you use in the clinical education of athletic training students (ATSs) before participating in the clinical supervision program?
   - What behaviors have you adopted in the clinical education of ATSs since participating in the clinical supervision program?
3. Describe how your practices in self-reflection (relating to your role as PRECEPTOR) have changed after participating in the clinical supervision program.
   - What reflective practices did you use prior to participating in the clinical supervision program?
   - What reflective practices have you adopted since participating in the clinical supervision program?