

Athletic Training Student Clinical Performance Evaluation: A Content and Frequency Analysis

By

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Abstract

This study described the content of clinical performance evaluation forms utilized to evaluate athletic training students and the frequency in which they were utilized by preceptors. The purpose of this study was to determine what professional skills and behaviors were being evaluated by preceptors during formal evaluation sessions of athletic training students enrolled in CAATE accredited programs. A secondary purpose of this study was to describe the type of feedback and frequency in which it is given to the students during clinical rotations.

Descriptive statistics were used to determine what professional behaviors and skills were being evaluated by preceptors in the clinical setting. Descriptive statistics were also used to determine the type of feedback and the frequency in which feedback was given to students during clinical rotations. The results of this study indicated that the majority of programs are utilizing preceptors to evaluate students' clinical performance at the middle and end of clinical rotations. A small number of programs are choosing to use preceptors to evaluate students on the Foundational Behaviors of Professional Practice, and the incidence of evaluation for clinical skills varies greatly between institutions. The results of this study also indicated that students are largely receiving quantitative feedback, with the incidence of qualitative feedback varying between institutions.

Findings resulted in the conclusion that athletic training education program directors and clinical coordinators should consider the views of healthcare professionals regarding new graduates of athletic training programs along with the proportion of professional behaviors and skills outlined in the *Competencies* when deciding which evaluation methods and practices are best suited at their institutions.

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Dedication

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Chapter I

Introduction

In order for athletic training students (ATs) to learn and develop as future professionals, they require job performance feedback throughout the duration of their clinical experience. Feedback is essential for students' growth as it provides direction¹, helps to boost confidence², and increases both motivation³ and self-esteem⁴. With the majority of allied health education programs requiring some form of clinical observation, feedback from clinical supervisors and preceptors can have a profound effect on the professional development of students outside of the traditional classroom setting. The literature clearly supports the importance of delivering feedback to students and several techniques in which to do so. Feedback is often provided during times of formal performance evaluation, and may also occur informally throughout the clinical observation. While the importance of feedback has been widely acknowledged by students and preceptors, students report inconsistencies in regards to the amount, timing, and type of feedback provided in the clinical setting.⁵⁻¹¹ Furthermore, there are no established guidelines for the methods by which programs conduct student performance evaluations and provide students with feedback within the clinical setting. This study examined the current evaluation practices of individual athletic training education programs (ATPs) to identify trends across the profession.

Statement of Purpose

The purpose of this study was to determine what professional skills and behaviors were being evaluated by preceptors during formal evaluation sessions of athletic training students enrolled in CAATE accredited programs. A secondary purpose of this study was to describe the type of feedback and frequency in which it is given to the students during clinical rotations.

Research Questions

The following research questions were addressed:

1. At what point(s) in their clinical rotations do ATs have their clinical performance formally evaluated?
2. What professional behaviors are being assessed by preceptors during formal performance evaluations?
3. What clinical skills are being assessed by preceptors during formal performance evaluations?
4. What type of feedback is given to ATs on performance evaluations? Are students receiving qualitative feedback, quantitative feedback, or both?

Significance

Both anecdotal evidence and current literature have suggested that new graduates of athletic training (AT) programs are not fully prepared to enter the workforce. New graduates have been found to be lacking in both professional behaviors¹² and clinical skills^{13,14}. The literature has demonstrated that feedback and the formal evaluation process can increase clinical skills,^{6,15} confidence,⁶ knowledge,^{6,15} self-esteem,⁶ productivity,⁶ clinical performance,^{6,16} and improve professional behavior.⁶

The CAATE's *Standards for the Accreditation of Professional Athletic Training Programs (Standards)*, currently states it is the responsibility of the clinical coordinator (CC) of each athletic training education program (ATP) to assure that student evaluations be conducted (*Standard 24:C*).¹⁷ However, after a review of NATA documents,¹⁸ CAATE documents,^{17,19} and the literature, it appears there is no clear set of methods or practices for which programs should

conduct ATs performance evaluations. *Standard 6* states that, “the specific volume and nature of this information (assessment measures) is influenced by the individual character of the institution and should be in keeping with other similar academic programs within the institution.”¹⁷ The CAATE *Policies and Procedures Manual (Policies and Procedures)* describes in Section V the notion of Institutional Autonomy by stating “the CAATE conducts business with respect for the sponsoring institution’s autonomy, self-governance and self-management within the scope of the standards.”¹⁹ With these policies in mind, program directors (PDs) and CCs are left to decide which evaluation methods and practices will be utilized based on specific behaviors and skills valued at their institutions. By identifying the current content and structure of ATs clinical performance evaluation forms in AT education programs, athletic training educators, clinical coordinators, and program directors can better assess their own evaluation practices to improve or enhance the quality of feedback given to ATs.

Scope of the Study

The scope of this study was to identify the current evaluation methods for students in the clinical setting across all CAATE accredited undergraduate and entry-level master AT education programs. As of April 2014, there were 398 accredited athletic training education programs (41 master’s, 339 undergraduate, 16 post-professional, and 2 residency).²⁰ This study was interested in the evaluation of non-certified AT students, so only 380 programs (both master’s and undergraduate) were solicited for participation. To participate in this study, PDs were asked to share blank copies of all forms related to ATs skill and behavior performance evaluation completed by preceptors from the 2013-2014 academic year. PDs were also asked to share information in regards to the timing and frequency of the formal evaluation process.

Assumptions

Assumptions for this study were that:

1. Participants provided accurate documentation of current evaluation forms utilized within their education program.
2. Participants responded honestly to questions regarding the timing and frequency of the formal evaluation process.
3. ATSS were involved in 16 week clinical rotations.

Limitations

The following were considered to be limitations for this study:

1. Participating program's evaluation forms may not be representative of other ATPs' forms nationwide.
2. Response rates were low due to the timing of data collection being at the end of the academic year and beginning of summer break.
3. Several of the skills and behaviors identified in this study could be classified as both a skill and a behavior. Certain skills could also be categorized into several overlapping content areas.

Definitions

The following definitions are used to clarify the various terms regarding the administration of ATPs and the clinical evaluation and feedback process as they related to this study:

Athletic Training Education Competencies (Competencies): Provides educational program personnel and others with the knowledge, skills, and clinical abilities to be mastered by students enrolled in professional athletic training programs.¹⁸ In anticipation of the updated version of the 5th Edition Competencies, practitioners are currently referring to this document as the Knowledge, Skills, and Abilities, or KSAs for short.

Behavior: The manner of conducting oneself through activities or mannerisms which are observable.

Commission on Accreditation of Athletic Training Education (CAATE): The accrediting body of athletic training education programs.

Constructive feedback: When one provides relevant and factual information to others in a manner that is respectful, helpful, and encouraging.²¹

Content areas: The listing of appropriate knowledge and skills one must possess to be deemed competent as an athletic trainer.

Feedback: An objective appraisal of student performance by a preceptor with the intention of improving clinical skills.²² This is often given daily between formal evaluation periods.

Formal feedback: When one sets aside a specific time and place for the discussion of students' clinical performance.²² These sessions are often performed at pre-determined periods throughout each clinical rotation so ATs have time to show improvement before the final evaluation.

Foundational Behaviors of Professional Practice: Basic behaviors that should permeate professional practice as an athletic trainer.¹⁸

Informal feedback: Occurs when preceptors offer random opinions and judgments regarding student performance in a real-time casual environment, often in the presence of others,²³ and is often used to provide specific and immediate information to ATs.

National Athletic Trainers' Association (NATA): The professional membership association of athletic trainers.

Preceptor: An experienced athletic training practitioner who teaches, instructs, supervises, and serves as a role model for a student.²⁴ Historically, in athletic training, this person has been referred to as a clinical supervisor, clinical instructor (CI), or approved clinical instructor (ACI).

Qualitative feedback: When one provides narrative information to the learner that describes an observed behavior or skill.

Quantitative feedback: When one offers feedback in the form of numerical marks, such as a given score from a rubric or a ranking on a Likert scale.

Skill: One's ability to proficiently perform a task or operation proficiently following training.

Chapter II

Review of Literature

Introduction

In conjunction with the National Athletic Trainer's Association (NATA), in 2011 the CAATE released the *5th Edition of Athletic Training Education Competencies (Competencies)*. The *Competencies* describe the knowledge, skills, and clinical abilities to be mastered by students enrolled in professional ATPs.¹⁸ The CAATE requires that the *Competencies* be instructed and evaluated in each accredited program. The *Competencies* are considered to be minimum requirements for a student's professional education, and programs are encouraged to exceed these minimums to provide students with the highest quality education possible.¹⁸ The *Competencies* separate professional behaviors and skills into two separate sections; the eight Content Areas and the Foundational Behaviors of Professional Practice (FBPP). Because students spend a considerable amount of time working in the clinical setting, preceptors are often asked to evaluate clinical skills and professional behaviors in Athletic Training Students (ATs). ATs are often required to meet one-on-one with preceptors during the process of formal performance evaluation to discuss their clinical skills, professional behaviors, strengths/weaknesses, and goals for improvement.

Content Areas of the 5th Edition Education Competencies

As the profession of athletic training continues to evolve, so do the *Competencies*. In 2011, the Professional Education Council (PEC) of the NATA was charged with creating the 5th Edition Educational Competencies. Along with subject matter experts including practicing athletic trainers, educators, and administrators, the PEC worked to revise and reorganize the

previous 12 content areas of the 4th Edition Competencies into the newly formed 8 content areas.¹⁸ The eight content areas are as follows: Evidence-Based Practice, Prevention and Health Promotion, Clinical Examination and Diagnosis, Acute Care of Injury and Illness, Therapeutic Interventions, Psychosocial Strategies and Referral, Healthcare Administration, and Professional Development and Responsibility.

Evidence-Based Practice (EBP) was added as a new content area of the *Competencies* to reflect the importance of using EBP concepts and principles to improve patient outcomes.¹⁸ A focus on delivering evidence-based healthcare is currently being emphasized across many of the allied health professions. An evidence-based practitioner incorporates the best available evidence, their clinical skills, and the needs of the patient to maximize patient outcomes.¹⁸ This content area focuses on the knowledge and skills necessary for entry-level ATCs to use a systematic approach to ask questions and answer clinically relevant questions that affect patient care by using review and application of existing research evidence.

The Prevention and Health Promotion (PHP) content area was a combination of the previous risk management/prevention and nutritional consideration content areas. The PHP content area focuses on the knowledge and skills necessary for athletic trainers to develop and implement strategies and programs to prevent the occurrence and/or severity of injuries and illnesses to optimize their patients' overall health and quality of life.¹⁸ Many of the skills in this content area recognize the importance of nutrition and physical activity in maintaining a healthy lifestyle and in preventing chronic disease.

The Clinical Examination and Diagnosis (CE) content area was also formed by combining two content areas from the 4th Edition Competencies: clinical exam/diagnosis and medical conditions/disabilities. This was done to reflect the idea that ATCs use one standard

clinical examination model adapted to the individual needs of the patient.¹⁸ The CE content area emphasizes a thorough understanding of anatomy, physiology, and biomechanics and the application of clinical reasoning skills during the clinical examination process to formulate a differential diagnosis. Skills and knowledge in this area have a lot of overlap with other content areas of the *Competencies*. Certain skills that could be considered applicable to this content area, such as acute care and the assessment of a patient's cognitive status, are included in other more defined content areas.

The Acute Care of Injury and Illness (AC) content area has undergone considerable change and updating from the 4th Edition *Competencies*. Athletic trainers are often the first on the scene when injuries occur. For this reason, athletic trainers must be knowledgeable and skilled in the evaluation and management of acute injuries and illnesses. Many of the updates to this content area have been in response to recent position statements released by the NATA.¹⁸

A new content area titled Therapeutic Interventions (TI) was created as a combination of three previous domains: therapeutic modalities, conditioning and rehabilitative exercise, and pharmacology. Athletic trainers assess patient status using a variety of outcome measures. After the initial assessment, therapeutic interventions are then designed to maximize the patient's participation and health-related quality of life.¹⁸ Athletic trainers have a wide variety of tools at their disposal when choosing the appropriate intervention technique such as therapeutic exercise, therapeutic modalities, and various prescription and over-the-counter medications. Knowledge and skill in these areas are crucial to the identification and development of an appropriate treatment plan.

The Psychosocial Strategies and Referral (PS) content area outlines the necessary knowledge and skills to address patients' mental health needs. More focus is currently being

placed on a patient's mental health and the effect it has on overall health and wellness. Athletic trainers must be able to recognize when a patient is exhibiting abnormal social, emotional, and mental behaviors.¹⁸ In addition to recognizing abnormal behaviors, athletic trainers must possess the ability to intervene and appropriately manage instances when mental health problems may be impacting the patient. The ability to properly refer patients with mental health concerns is also an important skill for athletic trainers to possess. Athletic trainers must be able to work effectively and cooperatively with other mental health providers to adequately address the needs of the patient.

Administrative duties account for a large portion of an athletic trainer's daily responsibilities and time. The Healthcare Administration (HA) content area describes the necessary skills and knowledge an athletic trainer should possess to be an effective administrator of health care services. Some of the key concepts of this area are risk management, facility management, documentation, patient privacy, health insurance, and reimbursement.

The final content area of the Competencies is Professional Development and Responsibility (PD). It is imperative that athletic trainers practice and operate within the limits of state and national regulations. In addition to legal requirements such as state practice acts, there are two other documents that serve as a guide for athletic trainers to make sound moral and ethical decisions; the BOC Standards of Professional Practice²⁵ and the NATA's Code of Ethics²⁶. It is critical for all athletic trainers to have knowledge of these professional documents and an understanding of the consequences for violating the principles within them.

Foundational Behaviors of Professional Practice

The FBPP lists and describes seven behavioral categories which are said to permeate the professional practice of certified athletic trainers (ATCs). The seven behavioral categories are Primacy of the Patient, Team Approach to Practice, Legal Practice, Ethical Practice, Advancing Knowledge, Cultural Competence, and Professionalism. The FBPP serve as a framework for athletic trainers to make sound ethical, legal, and professional decisions as part of their daily duties and responsibilities. The NATA stated that these seven behaviors should be incorporated into the athletic training (AT) instruction and assessed throughout the educational program.¹⁸ A description of each category and examples of professional behaviors in their respective categories are as follows:

The “Primacy of the Patient” behavior refers to one’s ability to rank or prioritize the healthcare needs of the patient. Example behaviors are: recognizing conflicts of interest surrounding a patient’s health, following patient confidentiality standards, striving to provide quality healthcare for the patient, and serving as an advocate for the patient.

The “Team Approach to Practice” behavior refers to one’s ability to appropriately function and communicate as a member of the sports medicine team. Example behaviors are: recognizing the unique skills/abilities of other healthcare professionals, understanding the roles of other healthcare professionals, executing duties of an athletic training student within the scope of practice, involving the patient (and family when appropriate) when making healthcare decisions, and working well with others to ensure positive patient outcomes.

The “Legal Practice” behavior refers to one’s awareness and conformity to the laws surrounding the profession of athletic training. Example behaviors are: practicing in a legally

competent manner, being aware of and following the state laws that govern athletic training, and understanding the level of consequences for violating the laws of the profession.

The “Ethical Practice” behavior refers to one’s ability to make sound ethical decisions in accordance with professional standards. Example behaviors are: being aware of the NATA’s Code of Ethics and BOC’s Standards of Professional Practice, complying with the NATA’s Code of Ethics and BOC’s Standards of Professional Practice, and being aware of the consequences for violating the principles from these two documents.

The “Advancing Knowledge” behavior refers to one’s efforts to remain up to date with the latest research and current practices in the field of athletic training as well as other allied healthcare professions. Example behaviors are: critically examining knowledge in athletic training and related fields, using evidence-based practice in the delivery of care, taking advantage of continuing education opportunities to improve practice, promoting the value of research and scholarship in athletic training, and sharing new knowledge with fellow athletic trainers, patients, and other healthcare professionals.

The “Cultural Competence” behavior refers to one’s ability to effectively interact with people of different cultures and socio-economic backgrounds. Example behaviors are: being aware of individuals’ cultural differences and attitudes towards healthcare, demonstrating knowledge, attitudes, behaviors, and skills necessary to achieve optimal healthcare for diverse populations, and working effectively and respectfully with diverse populations.

The “Professionalism” behavior refers to one’s ability to act in accordance with behavioral standards established by the profession of athletic training. Example behaviors are: advocating for the profession, demonstrating honesty and integrity, exhibiting compassion and empathy, and demonstrating effective interpersonal communication skills.

Clinical Integration Proficiencies

The 5th Edition of the *Competencies* includes a newly organized section of Clinical Integration Proficiencies (CIPs). The CIPs represent the synthesis and integration of knowledge, skills, and clinical decision-making into actual patient/client care.¹⁸ The description of the CIPs often includes many individual skills and behaviors from different content areas and domains of the FBPP. The CIPs are a combination of individual skills, more global in nature, and have been suggested to be assessed while ATs are engaged in actual patient care.¹⁸ For these reasons, despite being an important component of the *Competencies*, the CIPs were deemed irrelevant to this study.

Clinical Feedback

The meaning of the word feedback and the methods by which it is provided can vary across occupations. Even within the numerous allied health fields, the definition of feedback can vary from one area to another. Athletic training is a relatively new profession in the healthcare arena, with only a few studies done in recent years relative to student evaluation and feedback. Due to the lack of AT focused literature on the topic, many of the studies included in this review were conducted in the fields of nursing, medicine, and physical therapy, with nursing accounting for the bulk of the literature. The educational model utilized by athletic training programs is very similar to that of nursing. In addition to required coursework, both nursing students and ATs gain hands-on training under the supervision of a preceptor during the completion of clinical observation hours. This accounts for a large portion of the overall educational experience. Both groups of students are required to work alongside a licensed professional and assist with the delivery of health care services to the patient or client base. Usually at some point throughout the

student's clinical experience, a formal evaluation of job performance will be conducted where the student and preceptor set aside time to discuss and reflect on the student's performance in relation to a set of behaviors and skills

Positive Aspects of Feedback

Some studies have previously identified aspects of feedback viewed as beneficial by both the student and the preceptor.^{5,8,22,27-33} Gigante et al have defined effective feedback as being specific and describing the observed behavior.²² Clear and concise feedback helps to increase student learning by eliminating confusion. Informing an ATS they did well on an injury evaluation is positive encouragement, but describing for them specifically what aspects of their job they performed well will serve to increase student learning and improve future performance. In another study examining viewpoints on feedback, Curtis et al found that students placed a high value on feedback when it is viewed as constructive.²⁹ ATSs in this study, reported that constructive feedback added to their professional knowledge base and enhanced their performance in the clinical setting more so than being provided with negative feedback.

The time frame in which feedback is given in the clinical setting is another consideration for preceptors. According to Gigante²², "effective feedback is timely, optimally offered immediately after an observed behavior but certainly before the action has been forgotten. If feedback is deferred too long, the learner may forget the context or may not have the opportunity to practice and demonstrate improvement." The process of feedback should be ongoing throughout a student's clinical experience. Although current practice allows for multiple opportunities to receive formal feedback (three-week, mid-semester, end of semester), preceptors should continue to provide feedback between these pre-set intervals. Ideally a combination of

formal and informal methods should be used to ensure ongoing and timely information is given.⁸ Waiting too long to provide feedback can be detrimental to both the preceptor and the ATS. If feedback is delayed until periods of formal evaluation, small problems often snowball into large problems. Many students are only informed of poor job performance at the end of a placement when they have no opportunity to improve.³⁴ This lack of communication leads to wasted opportunities for advancement and development of clinical skills for the student. Delaying feedback can also increase strain and tension on the ATS/preceptor relationship when lines of communication breakdown.

Barriers to Providing Effective Feedback

The supervision and clinical education of ATs is most often a secondary job responsibility for certified athletic training staff. Although the role of mentor and educator is often embraced by preceptors, the on-going daily demands of their position make it difficult to dedicate time for the provision of individual student feedback and education regarding clinical skills and knowledge. When feedback is not provided, students commonly interpret its absence as satisfactory job performance in the eyes of their preceptors.

It is common for clinical rotations in athletic training education to last one semester or approximately 16 weeks. During that time, the student and preceptor often develop a personal relationship in addition to a professional relationship. This overlap of both personal and professional roles at times makes the offering and receiving of feedback difficult for both the student and the preceptor. When friendships develop alongside a professional relationship, it is important that feedback still be delivered in a formal and professional manner. This mitigates the opportunity for ATs to take any criticism personally which may cause unnecessary strain on

the working relationship. Some preceptors avoid giving negative feedback because they fear that criticism will affect their relationships with students. Many preceptors report being uneasy with the process of delivering feedback, particularly in giving negative feedback to students.^{11,28,35} Shying away from providing negative or critical feedback can be damaging to the ATS and their growth and development as a professional. Without feedback to reinforce positive behaviors or correct negative behaviors, students will remain stagnant with their clinical skills, self-confidence, and growth as a professional. Factors such as a student's self-esteem³³, relationships in the workplace, and the expectations of the student affect how the feedback is received.³⁶ Supervisors should be cognizant of the relationship between self-esteem and receipt of feedback when working with ATSS.

Feedback Delivery Methods

Utilizing appropriate methods is important when delivering feedback to students in the clinical setting. It is widely acknowledged that feedback is more likely to be accepted and result in improved practice if the information is appropriately presented to the student.^{30,32,35} When giving formal feedback to students, preceptors should devote sufficient time and space to the process to ensure that all aspects of practice can be discussed without interruption. Feedback should be given in a quiet, confidential environment. An informal room layout will promote a two-way dialogue of the students' performance and should foster openness and honesty.²³ By utilizing these techniques, students are likely to be more receptive to feedback. It is not uncommon for students to become defensive when presented with a negative critical assessment of their skills and overall performance. However, when feedback is delivered in the correct

setting and preceptors present information in a professional and caring manner, the feedback is more likely to be accepted and used for positive professional growth.

Negative feedback, despite being reported by students as a non-helpful preceptor behavior²⁹, is often necessary in clinical education. Regardless of how knowledgeable and prepared ATs are, there will come a time when preceptors will provide them with feedback viewed as negative or critical of their performance. When offering negative or critical feedback, it may be useful to utilize the “sandwich” technique.³⁵ This method consists of providing negative feedback sandwiched between two specific pieces of positive feedback. The “sandwich” technique helps students by lessening the impact negative comments have on their self-esteem and professional confidence. Following the negative feedback immediately with positive feedback helps to keep the tone of the meeting a positive one designed to help the student. In addition to setting a positive tone, the “sandwich” technique shows caring and compassion on behalf of the preceptor. When students feel respected by their preceptor, they are more likely to value the information received.³¹ Establishing a culture of ongoing positive and respectful feedback will benefit both the student and the preceptor.

Timing of Feedback

It is important for preceptors to establish a system of delivering feedback to ATs early on in their rotations. Instilling a culture of constant feedback early in the relationship can help ATs and preceptors to be more open and honest with their communication and their willingness to both give and accept feedback in general.

The fast-paced nature of the athletic training profession, specifically in the collegiate setting, makes it difficult for preceptors to provide students with timely feedback. Preceptors

must give priority to patient care which frequently results in minimal supervision of students.²³ In addition, preceptors often supervise more than one student at a time which allows for even fewer opportunities to provide individualized feedback to students. In an attempt to make the ATS evaluation process more manageable, preceptors are often given a rubric and asked to provide only summative feedback through the ranking of behaviors or skills. Some studies have reported that students do not benefit from feedback in the form of numerical marks.^{27,34,37} Instead, preceptors should be narrative and include their opinion about current performance and explore options to improve practice when providing feedback.^{36,38} Once students have been provided with critical feedback, the student and preceptor should discuss ways to improve job performance in the future. Preceptors should also provide reassurance about achieved competency, guide future learning, reinforce positive actions, identify and correct areas for improvement, and promote reflection.²² Providing positive feedback regarding job performance helps increase self-confidence and personal pride in ATSs. Preceptors can encourage reflection in ATSs by requiring them to seek alternatives to their actions, view their behavior from several perspectives, consider consequences, and asking “what if” questions. It seems that reflection also helps to improve ATSs’ confidence and allows them to take responsibility for their actions.

Feedback Acceptance

Throughout their undergraduate clinical experience, an ATS will have a number of preceptors, each with his/her own working style and personality. ATSs rarely get to choose the preceptors they will work with. Instead, they are assigned to specific clinical rotations based on criteria set forth by each AT education program, such as lower extremity sport, upper extremity sport, and equipment intensive sport. The constant changing of supervisors can be difficult for

ATSS to manage. It can take several weeks for ATSS and preceptors to gain the trust and mutual respect needed for a healthy working relationship. For some preceptor/ATS pairings, trust and mutual respect are gained early on, thus creating an environment in which feedback is given on a regular basis. It seems that some pairs are able to develop a culture of feedback, reflection, and action plans. However, sometimes personalities and working styles between the ATS and preceptor can be in conflict with each other and such a culture is not able to be formed.³⁹ This often results in a breakdown in communication where the frequent offering and receiving of feedback fails to exist.

Need for Improved Feedback

There is a general consensus among current athletic training professionals that new graduates are not fully prepared to enter the workforce. In a recent study by Carr and Volberding¹², focus group interviews were conducted with both employers and employees to identify any “thematic” deficiencies of new graduates entering the workforce. They found that new graduates are lacking in the areas of interpersonal communication, decision making/independence, initiative, confidence, and humility/ability to learn from mistakes. In addition, a study by Weidner and Vincent¹⁴ identified that new graduates do not feel adequately prepared to enter the workforce in other areas such as rehabilitation and reconditioning, organization and administration, counseling and guidance of athletes, and education of athletes. Although both studies conclude that the current educational model is adequate, the idea that new graduates are not prepared to enter the workforce suggests there is room for improvement with the current educational system whereby certain content areas need increased emphasis.

A study by Donahue¹³ examined practicing ATCs' perceptions of professional preparation for the content areas based on the 4th Edition of the *Competencies*. Survey results of this study revealed that ATCs felt most prepared in the areas of acute care of injury and illness, assessment and evaluation, risk management and injury prevention, and therapeutic modalities. ATCs in this study felt the least prepared in the content areas pharmacology, psychosocial intervention and referral, and healthcare administration. The perceived lack of preparation in the areas of psychosocial intervention and referral along with healthcare administration are consistent with the findings of Weidner and Vincent.

Theoretical Frameworks

Beyond the established CAATE guidelines, the use of theoretical frameworks is limited in athletic training education programs. However, there are several educational theories that relate to and provide a framework for the current model of clinical education in athletic training. Burch's Conscious Competency Model⁴⁰ outlines four stages of competency and one's awareness of their own competence as they progress in their training. The first stage is unconscious incompetence where students are unaware of what they don't know. To progress to the second stage, students must begin to recognize their incompetence and learn the value of new skills. From there, students enter the second stage of conscious incompetence. In this stage, students become more aware of their deficits as well as the value of new skills in addressing the incompetence. The third stage of this model is the conscious competence stage. During this stage students acquire the necessary skills, but demonstrating those skills takes considerable thought and concentration. The fourth stage is unconscious competence. In this final stage, students are

able to competently perform the required skills with minimal thought and the skills have become second nature.

A second theory supporting the current model of clinical education in athletic training is Dreyfus' Five-stage Model of Skill Acquisition.⁴¹ In his model, a learner will progress through five stages: novice, advanced beginner, competence, proficiency, and expertise. In the novice stage, students are given a set of rules to follow as they begin the learning process. As an advanced beginner, students will begin to develop an understanding of relevant context and recognize new and important aspects. During the competence stage, students become aware of more relevant elements and procedures and will begin to make situational decisions. In the proficiency stage, the competent learner is able to discriminate among situations to accomplish a task. In the final expertise stage, the individual is now able to recognize tasks to be completed and know immediately how to achieve the desired outcome.

Both of the models described above provide a framework for athletic training students' clinical education experience and their development into professionals through learning and skill acquisition. Unconscious competence and expertise are desired for all ATs. With both of these models, feedback and evaluation can play an important role in helping the student progress to more advanced levels of learning and understanding.

Summary

There is a significant amount of literature that relates to the feedback process in the clinical setting and effective methods to provide feedback to students. Documents produced by the CAATE and the NATA provide a framework of professional behaviors and skills that are both valued and necessary for a successful career as an athletic trainer. However, the idea of

institutional autonomy has led to PDs and CCs choosing which evaluation techniques are best suited to their programs, making evaluation methods inconsistent across accredited ATPs. The review of existing literature did not reveal a “best practice” or standardized process for the clinical evaluation of behaviors and skills. This research attempted to identify the methods of performance evaluation that were being utilized by CAATE accredited AT education programs. This analysis of current practices, along with consideration of the profession’s view of new graduates, should help practitioners and program directors better assess their own feedback practices and determine which evaluation and feedback strategies are best for their students.

Chapter III

Methods

Purpose

The purpose of this study was to determine what professional skills and behaviors were being evaluated by preceptors during formal evaluation sessions of athletic training students enrolled in CAATE accredited programs. A secondary purpose of this study was to describe the type of feedback and frequency in which it is given to the students during clinical rotations.

Human Subjects

An application to the University of Kansas' Human Subjects Committee of Lawrence was submitted, (HSC-L Study # 921). The HSC-L deemed their approval was unnecessary as no actual performance evaluation data would be collected on human subjects (See Appendix C). An informed consent statement was provided upon request (See Appendix D). Only blank evaluation forms were collected.

Research Design

This study was designed to analyze the practice of formal performance evaluation for athletic training students in CAATE accredited ATPs in regard to content and frequency of evaluation periods. This research was non-experimental⁴² as there was no manipulation of an independent variable. This was also a descriptive study⁴² because there was an attempt to describe the characteristics of a specific population. By asking the overall questions of “what” is being evaluated and “how” often, a descriptive research design was deemed most suitable to this study.

A review of literature was conducted to gather information regarding feedback and performance evaluation in the clinical setting. A thorough examination of both contextual literature and database research revealed very few studies specific to the evaluation and feedback process as it relates to athletic training education. To acquire the necessary data for this study, program directors for all 380 CAATE accredited undergraduate and master's programs were solicited via email and telephone calls to participate by sharing the evaluation forms currently being utilized within their academic program.

Data Collection Procedures

Participants and Instrumentation

Email addresses and telephone numbers of current PDs were obtained from the CAATE website.²⁰ In the first phase of recruitment, PDs were sent a generic and very brief request for participation via email (see Appendix A). Several PDs replied immediately seeking more information regarding the use and privacy of the data. In response to their initial concerns, a second, more personal descriptive email was sent to all PDs two weeks after the initial email (See Appendix B). PDs were again asked to provide a copy of all current student evaluation forms completed by preceptors for their institution and also to provide the frequency or schedule of formal evaluation periods in the body of the reply email. Evaluation forms were collected from PDs electronically in several forms such as text documents, PDFs, and links to online surveys. A small number of PDs chose to provide hard copies of evaluation forms through traditional mail.

For the second phase of recruitment (4 weeks from the initial email), phone calls to PDs' direct lines were made to solicit and encourage their participation. Two attempts were made to

contact each PD by telephone and one voicemail message was left if individuals did not answer. The third phase of recruitment (6 weeks from the initial email) consisted of a final follow up email to those PDs or CCs who had previously indicated, through email or telephone conversation, their desire and willingness to participate but had yet to do so.

Demographics

By soliciting the entire population of PDs, there was a better chance of obtaining a representative sample of education programs across several institutional demographic factors. According to Carr and Volberding,⁴³ there are several institutional demographic variables of AT programs to consider when sampling: institutional affiliation (55% state vs 45% private), institution athletic affiliation (40% DI, 25% DII, 28% DIII, or 7% NAIA), and degree type (95% undergraduate or 5% entry-level master). A recent review of CAATE accredited programs²⁰ conducted in April, 2014 for this study revealed the percentage of undergraduate programs (89.2%) had decreased while the master's programs (10.8%) have increased.

Data Coding

Once collected, each institution's forms were analyzed to identify the specific skills and behaviors being evaluated by preceptors within their ATP. To avoid duplication in the reporting of results, forms were analyzed across all levels for redundancy. For example, if a behavior or skill was evaluated at an institution more than one time in the program (ATS was evaluated on initiative as a junior and as a senior), to maintain accuracy in the reporting of data, that information was only recorded one time. Coding was done this way to better represent what individual skills and behaviors were being evaluated by programs as opposed to how many times they were evaluated.

Although the intended skill or behavior to be evaluated was similar, the wording and description of individual items often varied between forms. Several forms listed a skill or behavior in a single word, such as “taping” or “punctuality”, where as other forms provided more description of the activity such as “student possesses adequate taping skills” or “student is punctual in reporting to the assigned clinical rotation”. In these cases, the behavior was identified and coded as simply “taping” and “punctuality” for ease in the reporting of data.

Double-barreling is a common occurrence within evaluation forms where preceptors are asked to provide a rating for a single item containing multiple skills and/or behaviors.⁴⁴ When double-barreling did occur, individual skills and behaviors were identified and coded as separate items. For example, the following item “student displays appropriate wound care techniques and uses proper BBP protocols” was then coded as separate skills under the categories “wound care and hemorrhage control” and “adheres to bloodborne pathogens/OSHA procedures”.

Data from evaluation forms were coded and entered in Statistical Package for Social Sciences⁴⁵ (SPSS) version 20. A list of variables was created for each identified skill and behavior being evaluated by an ATP. As new skills and behaviors were identified, new variables were added to the data set. Institutions were then coded on each variable as either “evaluated” or “not evaluated”. In addition to the skills and behaviors listed on the forms, additional information such as feedback type, strengths/weakness/areas to improve, and goals were identified and coded as variables. Feedback type was identified as either qualitative, quantitative, or both. Qualitative feedback was identified when a “comments” section was noted next to the evaluated items or at the end of the evaluation form. Quantitative feedback was identified when only a score or rating of performance was required by the form. Forms were coded as “both” when options to provide both qualitative and quantitative feedback were given. Strengths/weaknesses/areas to improve

and goals were coded as either included or not included on the form. Data for the institutional demographic variables affiliation, athletic affiliation, and degree type were captured via the internet by visiting the participating institution's homepage. That data were then coded into SPSS for further analysis.

Inter-rater Agreement

Upon entering all data into SPSS, individual skills and behaviors were then categorized into their respective domain of the Content Areas and the FBPP. Since many of the skills and behaviors could potentially be categorized into multiple domains, a measure of inter-rater agreement was established. Two raters were selected based on their knowledge, understanding, and familiarity with the *Competencies*. Raters were provided a list of 16 athletic training skills and 15 professional behaviors identified during data collection. Raters were asked to categorize each behavior and skill into their respective content area of the *Competencies* or domain of the FBPP. For Rater #1, an inter-rater agreement of 94% (29/31) was achieved while Rater #2 had an agreement rate of 87% (27/31). According to Graham et al,⁴⁶ measurements of absolute agreement at or above 90% are considered high, while measurements over 75% are considered acceptable.

Categorization of Variables

Evaluated behaviors and skills were identified and then categorized under the appropriate domain of FBPP or content area of the *Competencies*. Appropriateness of categorization of variables was based on the content listed under each individual domain of FBPP or content area provided in the *Competencies*. When individual items were listed directly in both a content area of the *Competencies* and a domain of the FBPP, certain variables were categorized as both a skill and a behavior. For example: the description of the FBPP Team Approach to Practice includes

the phrase “Understand the scope of practice of other healthcare professionals” while the content area Professional Development and Responsibility lists “Differentiate among the preparation, scopes of practice, and roles and responsibilities of healthcare providers and other professionals with whom athletic trainers interact”. Due to similarities in description, the variable identified and coded as “understands the roles of others in the delivery of healthcare services” was recorded as both a behavior and skill.

Data Analysis

This study utilized descriptive statistics⁴⁷ as calculated by SPSS, to describe the frequency of formal evaluation periods and the content of evaluation forms in regard to behaviors, skills, and feedback type. A summary of coded variables of interest are as follows:

1. Timing/Frequency: Weekly, bi-monthly, three week, mid-semester, twelve week, end of semester
2. Content: Behaviors and skills classified into their respective content area of the *Competencies* or category of FBPP coded as “evaluated” or “not evaluated”
3. Feedback type: Qualitative, quantitative, or both
4. Institutional affiliation: State or private
5. Athletic affiliation: NCAA DI, DII, DIII, or NAIA
6. Degree type: Undergraduate or master’s degree

These descriptive statistics were used to examine the proposed research questions of interest.

The methods for each research question were:

Research question one. To determine the frequency and timing of formal evaluation periods, participants were asked to provide a description of when periods of formal evaluation occurred

within their ATP. Descriptive statistics were calculated to illustrate frequency of evaluation sessions across all institutions.

Research question two. To determine which professional behaviors are being evaluated by preceptors, descriptive statistics were calculated to illustrate frequency of evaluation across all institutions for each behavior identified during data collection.

Research question three. To determine which professional skills are being evaluated by preceptors, descriptive statistics were calculated to illustrate frequency of evaluation across all institutions for each skill identified during data collection.

Research question four. To determine what type of feedback ATNs are given during periods of formal evaluation, descriptive statistics were calculated to illustrate the presence of the following items on each evaluation form: quantitative feedback in the form of a numerical rating or visual analog scale, qualitative feedback in the form of a narrative comments section, a strengths/weaknesses/areas for improvement section, or a clinical/personal goals section.

Chapter IV

Results

Purpose

The purpose of this study was to determine what professional skills and behaviors were being evaluated by preceptors during formal evaluation sessions of athletic training students enrolled in CAATE accredited programs. A secondary purpose of this study was to describe the type of feedback and frequency in which it is given to the students during clinical rotations.

Sample Demographics

A total of 237 separate evaluation forms were collected from 76 (20%) institutions. Table 1 illustrates the institutional demographics for the programs included in this study. In comparison to the population demographics as identified in the literature,⁴³ the sample appears to be representative (+/- 5% actual population values) with regards to institution affiliation and degree type offered. Athletic affiliation demographics were slightly non-representative in two categories with participation from institutions at the Division III level being below the national average (- 9.6%) and participation from institutions at the NAIA level being above the national average (+7.5%).

Table 1. Institutional demographics of participants (N = 76)

Variable	Number	Sample Percent	Population Percent
Institutional Affiliation			
State	45	59.2	54.4 ^a
Private	31	40.8	45.5 ^a
Athletic Affiliation			
Division I	34	44.7	40.0 ^a
Division II	17	22.4	25.0 ^a
Division III	14	18.4	28.0 ^a
NAIA	11	14.5	7.0 ^a
Program Type			
Undergraduate	69	90.8	89.2 ^b
Entry-level master	7	9.2	10.8 ^b

^a Carr and Volberding⁴³

^b CAATE²⁰

Research Question One

To determine the frequency of formal evaluation sessions during ATSS' clinical rotations, descriptive statistics were calculated for each of the frequency related variables. The data in Table 2 presents the results for the frequency of formal feedback sessions.

Table 2. Frequency of formal feedback sessions

Variable	Number	Percent
End of rotation evaluation	76	100.0
Mid-rotation evaluation	65	85.5
Beginning of rotation evaluation	5	6.6
Bi-monthly evaluation	3	3.9
Twelve week evaluation	1	1.3
Weekly evaluation	1	1.3

Research Question Two

To determine what behaviors were being evaluated by preceptors, descriptive statistics were calculated for each behavior variable. A total of 109 separate behaviors were identified and coded during data collection. The data presented in Tables 3-9 are the results of the program evaluation for each domain of FBPP. Behaviors determined to not be in close relation to one of the seven domains of FBPP are listed in Table 10 as "Other" behaviors.

Table 3. Primacy of the Patient

Variable	Number	Percent
Maintains patient confidentiality ^a	36	47.4
Advocates for the patient / recognizes conflict of interest	14	18.4
Abides by HIPAA and FERPA ^b	13	17.1
Provides the best healthcare available	5	6.6
Primacy of the patient	1	1.3

Abbreviations: HIPAA, Health Information Portability and Accountability Act; FERPA, Family Educational Rights and Privacy Act.

^a Also listed under content area Healthcare Administration

^b Also listed under content area Professional Development and Responsibility

Table 4. Team Approach to Practice

Variable	Number	Percent
Communication (preceptor)	37	48.7
Communication (patient/athlete)	24	31.6
Communication (other health care professionals)	20	26.3
Ability to work (well) with others	19	25.0
Communication (coaches)	18	23.7
Executes duties within the scope of an athletic training student ^a	14	18.4
Understands the role of certified athletic trainer ^a	14	18.4
Understands the roles of others in the delivery of healthcare services ^b	13	17.1
Communication (peers)	11	14.5
Recognizes the unique skills and abilities of others ^a	11	14.5
Team approach to practice	9	11.8
Understands their limitations (as an athletic training student) ^a	9	11.8
Includes patients in decision making process	7	9.2
Develops and maintains relationships with stakeholders	6	7.9
Communication (administrators)	4	5.3
Communication (family)	2	2.6

^a Also listed under content area Healthcare Administration

^b Also listed under content area Professional Development and Responsibility

Table 5. Legal Practice

Variable	Number	Percent
Practices in a legally competent manner ^a	26	34.2
Understands consequences of violating laws that govern athletic training ^a	9	11.8

^a Also listed under content area Professional Development and Responsibility

Table 6. Ethical Practice

Variable	Number	Percent
Practices in an ethical manner	27	35.5
Complies with the NATA COE and BOC SPP ^a	18	23.7
Understands consequences of violating the NATA COE and BOC SPP	6	7.9

Abbreviations: NATA, National Athletic Trainers' Association; COE, Code of Ethics; BOC, Board of Certification; SPP, Standards of Professional Practice.

^a Also listed under content area Professional Development and Responsibility

Table 7. Advancing Knowledge

Variable	Number	Percent
Uses evidence-based practice in the delivery of healthcare services ^a	19	25.0
Searches for answers to questions	19	25.0
Shows initiative to learn from preceptor, peers, and others	16	21.1
Appreciates the connection between education and practice	10	13.2
Promotes the value of research and scholarship in AT	6	7.9
Disseminates new knowledge to peer and the patient ^b	4	5.3
Critically examines body of knowledge in athletic training and related fields	3	3.9
Advancing knowledge	2	2.6
Accesses professional journals ^b	1	1.3

^a Also listed under content area Evidence-based Practice

^b Also listed under content area Professional Development and Responsibility

Table 8. Cultural Competence

Variable	Number	Percent
Works respectfully and effectively with individuals in diverse populations	18	23.7
Aware of the impact that patients cultural differences have on their attitudes toward healthcare	13	17.1
Demonstrates knowledge, attitudes, behavior, and skill to achieve optimal health outcomes	5	6.6
Cultural competence	1	1.3

Table 9. Professionalism

Variable	Number	Percent
Appropriate dress/professional appearance	64	84.2
Communication	39	51.3
Professionalism	39	51.3
Rapport with athletes	24	31.6
Rapport with staff/other healthcare providers	21	27.6
Rapport with peers	19	25.0
Exhibits compassion and empathy	17	22.4
Demonstrates honesty and integrity	11	14.5
Rapport with coaches	9	11.8
Professional relationships with patients	9	11.8
Professional relationships with coaches and preceptors	9	11.8
Advocates for the profession ^a	9	11.8
Interactions with coaches, athletes, and staff	8	10.5
Demonstrates effective use of interpersonal skills	7	9.2
Speaks with proper tone	7	9.2
Interactions with patient	7	9.2
Has command of the English language	6	7.9
Speaks with tact and diplomacy	6	7.9
Interpersonal skills	4	5.3
Shows respect for others' opinion	3	3.9

Table 9. Professionalism

Variable	Number	Percent
Investment in the profession	2	2.6
Communicates in a timely manner	1	1.3
Speaks with tact and respect to athletes	1	1.3
Speaks with tact and respect to coaches	1	1.3
Speaks with tact and respect to preceptors	1	1.3

^a Also listed under content area Professional Development and Responsibility

Table 10. "Other" behaviors

Variable	Number	Percent
Initiative	62	81.6
Punctuality	59	77.6
Acceptance of criticism	51	67.1
Attitude	45	59.2
Reliability/dependability	45	59.2
Self-confidence	42	55.3
Inquisitiveness	29	38.2
Enthusiasm	23	30.3
Organized	23	30.3
Leadership	22	28.9
Efficiency	21	27.6
Adaptability/flexibility	20	26.3
Emotional maturity	19	25.0
Responsible	19	25.0
Respectful of others	18	23.7
Attendance	16	21.1
Cooperative	15	19.7
Critical thinking	15	19.7
Time management	14	18.4
Work ethic	14	18.4
Awareness	11	14.5
Shows interest (athletes, clinical site, learning)	11	14.5
Listening skills	11	14.5
Motivation to learn	11	14.5
Judgment/attention to risk	9	11.8
Makes effective use of clinic time	8	10.5
Innovation/creativity	7	9.2
Preparation	7	9.2
Ability to act, but not over-react	6	7.9
Alert during practice	5	6.6
Emotionally mature when dealing with conflict	5	6.6
Intellectual curiosity	4	5.3
Loyalty	4	5.3
Resourceful	4	5.3
Utilizes appropriate body language	3	3.9

Table 10. “Other” behaviors

Variable	Number	Percent
Commitment (to clinical site)	3	3.9
Accountability	2	2.6
Goes above and beyond expectations	2	2.6
Firm with athletes	2	2.6
Patience	2	2.6
Trustworthiness	2	2.6
Willingness to learn	2	2.6
Collegiality	1	1.3
Compatibility	1	1.3
Shows promise as a future certified athletic trainer	1	1.3

Research Question Three

To determine what skills were being evaluated by preceptors, descriptive statistics were calculated for each skill variable. A total of 291 separate skills were identified and coded during data collection. The data presented in Tables 11-18 are the results of the program evaluation for each content area of the *Competencies*. The N for all content areas was 76. Skills determined to not be in close relation to one of the content areas are listed in Table 19 as “Other” skills.

Table 11. Evidence-Based Practice

Variable	Number	Percent
Uses evidence-based practice in the delivery of healthcare services ^a	19	25.0
Assesses quality of life with functional outcome measurements	11	14.5
Reassess patient status using clinical outcome measures	5	6.6
Explains the theoretical foundation of clinical outcomes assessment	3	3.9

^a Also listed under FBPP Advancing Knowledge

Table 12. Prevention and Health Promotion

Variable	Number	Percent
Taping skills	53	69.7
Wrapping/padding skills	40	52.6
Adheres to bloodborne pathogens/OSHA procedures	32	42.1
Equipment fitting	31	40.8
Nutrition and hydration management	28	36.8
Environmental conditions assessment (WBGT, heat index, wind chill)	20	26.3
Environmental hazard risk assessment	19	25.0
Understanding of pre-participation exams	16	21.1
Knowledge of environmental illness	12	15.8
Knowledge of/ability to counsel regarding substance abuse	9	11.8
Equipment safety inspection	7	9.2

Table 12. Prevention and Health Promotion

Variable	Number	Percent
Fabrication of splints/custom padding	7	9.2
Body composition	4	5.3
Taping/wrapping lower extremity	4	5.3
Knowledge of special equipment	3	3.9
Equipment fitting (observation of special needs)	3	3.9
Taping/wrapping upper extremity	3	3.9
Design of fitness programs	2	2.6
Identification of modifiable/non-modifiable risk factors	2	2.6
Prevention of injury/illness	2	2.6
Prevention of sudden death	2	2.6
Knowledge of nutritional supplements	2	2.6
Calculation of caloric intake/energy expenditure	1	1.3
Exercise physiology	1	1.3
Kinesiotape	1	1.3
Taping/wrapping thorax/spine	1	1.3
Knowledge of taping for contact sport	1	1.3

Abbreviations: OSHA, Occupational Health and Safety Act; WBGT, wet bulb globe thermometer.

Table 13. Clinical Examination and Diagnosis

Variable	Number	Percent
Evaluation of injuries	32	42.1
History taking	28	36.8
Makes appropriate referrals ^a	27	35.5
Special tests	28	36.8
Recognition of general medical illness	24	31.6
Palpating skills	21	27.6
Manual muscle/strength testing	20	26.3
Evaluation of lower extremity	19	25.0
Evaluation of upper extremity	19	25.0
Range of motion assessment	19	25.0
Evaluation of abdomen/thorax	18	23.7
Knowledge of anatomy	17	22.4
Observational skills	17	22.4
Evaluation of head/face	13	17.1
Evaluation of cervical spine	12	15.8
Neurologic function assessment	12	15.8
Determines return-to-play criteria	12	15.8
Determines diagnosis from evaluation	10	13.2
Evaluation of spine	10	13.2
Posture and movement assessment	9	11.8
Evaluation of cardiovascular system	8	10.5
Evaluation of respiratory system	8	10.5
Instrument use (glucometer, thermometer, stethoscope, otoscope, etc..)	8	10.5
Goniometry	8	10.5

Table 13. Clinical Examination and Diagnosis

Variable	Number	Percent
Evaluation of dermatological	7	9.2
Evaluation of low back	7	9.2
Identifies participation status	7	9.2
Recognition and identification of injuries	9	11.8
Recognition and identification of illness	7	9.2
Interprets diagnostic exams	6	7.9
Incorporates differential diagnosis into the evaluation	6	7.9
Evaluation of elbow	6	7.9
Evaluation of foot and lower leg	6	7.9
Evaluation of hip/thigh	6	7.9
Evaluation of knee	6	7.9
Evaluation of shoulder	6	7.9
Evaluation of wrist/hand	6	7.9
Gait analysis	6	7.9
Evaluation of ankle	5	6.6
Evaluation of thigh	5	6.6
Evaluation of gastrointestinal (auscultation, percussion, palpation)	5	6.6
Management of general medical conditions	5	6.6
Neurologic assessment (dermatome, myotome, reflex)	5	6.6
Neurological tests	5	6.6
Diagnostic imaging	4	5.3
Efficiency of evaluation	4	5.3
Identification of participation restrictions	4	5.3
Identification of risk factors (congenital or acquired abnormalities)	4	5.3
Demonstrates and interprets strength tests	4	5.3
Uses clinical prediction rules	3	3.9
Movement screen	3	3.9
Palpation lower extremity	3	3.9
Vascular tests lower extremity	3	3.9
Vascular tests upper extremity	3	3.9
Interprets the findings from clinical presentation	2	2.6
Uses clinical reasoning to determine diagnosis	2	2.6
Concussion assessment (SCAT, BESS, symptom checklist)	2	2.6
Evaluation of genitourinary (urine dip stick, refractometry)	2	2.6
Manual muscle tests lower extremity	2	2.6
Manual muscle tests upper extremity	2	2.6
Muscle function assessment	2	2.6
Neurological tests lower extremity	2	2.6
Neurological tests upper extremity	2	2.6
Palpation of ankle/foot/lower leg	2	2.6
Palpation of head/face/c-spine	2	2.6
Palpation of knee	2	2.6
Palpation of shoulder	2	2.6
Palpation upper extremity	2	2.6

Table 13. Clinical Examination and Diagnosis

Variable	Number	Percent
Special tests abdomen/thorax	2	2.6
Special tests ankle/foot/lower leg	2	2.6
Special tests elbow/wrist/hand	2	2.6
Special tests head/face/c-spine	2	2.6
Special tests hip/thigh/pelvis	2	2.6
Special tests knee	2	2.6
Special tests low back	2	2.6
Special tests shoulder	2	2.6
Recognize signs/symptoms of abdomen/thorax	2	2.6
Recognize signs/symptoms of foot/ankle/lower leg	2	2.6
Recognize signs/symptoms of elbow/hand/wrist	2	2.6
Recognize signs/symptoms of head/face/c-spine	2	2.6
Recognize signs/symptoms of hip/thigh/pelvis	2	2.6
Recognize signs/symptoms of knee	2	2.6
Recognize signs/symptoms of low back	2	2.6
Recognize signs/symptoms of shoulder	2	2.6
Evaluation of systemic infection (glucometer)	2	2.6
Anatomical landmark identification	1	1.3
Health and wellness exam	1	1.3
Height/weight	1	1.3
Knowledge of thorax/abdomen anatomy	1	1.3
Knowledge of hand/wrist/elbow anatomy	1	1.3
Knowledge of foot/ankle/lower leg anatomy	1	1.3
Knowledge of gender specific anatomy	1	1.3
Knowledge of head/face/c-spine anatomy	1	1.3
Knowledge of hip/thigh/pelvis anatomy	1	1.3
Knowledge of knee anatomy	1	1.3
Knowledge of low back anatomy	1	1.3
Knowledge of shoulder anatomy	1	1.3
Knowledge of the inflammatory response	1	1.3
Knowledge of surface anatomy lower extremity	1	1.3
Knowledge of surface anatomy upper extremity	1	1.3
Palpation of abdomen/thorax	1	1.3
Palpation of elbow/wrist/hand	1	1.3
Palpation of hip/thigh/pelvis	1	1.3
Palpation of low back	1	1.3
Pathology of injury/illness	1	1.3
Patient centered care	1	1.3
Snellen eye chart	1	1.3
Recognize functions of body systems	1	1.3

Abbreviations: SCAT, Sport Concussion Assessment Tool; BESS, Balance Error Scoring System.

^a Also listed under content area Psychosocial Strategies and Referral

Table 14. Acute Care of Injury and Illness

Variable	Number	Percent
Bracing/splinting	34	44.7
Follows the emergency action plan	32	42.1
Emergency situation management	30	39.5
Wound care and hemorrhage control	30	39.5
First aid	25	32.9
Acute care	18	23.7
Vital sign assessment	17	22.4
Ambulatory aids	15	19.7
Spine boarding and patient transfer techniques	13	17.1
Use of emergency equipment (oxygen, epipen, AED)	8	10.5
Immobilization/stabilization equipment	7	9.2
Home treatment plans	6	7.9
Acute care techniques	4	5.3
Brace/splint lower extremity	4	5.3
Ability to manage injuries	4	5.3
Brace/splint thorax and spine	3	3.9
Brace/splint upper extremity	3	3.9
Concussion management	3	3.9
Triage	3	3.9
Dermatological management	2	2.6
Explains the impact of immobilization following injury	2	2.6
Survey conduction (scene, primary, secondary)	2	2.6
Emergency equipment removal	1	1.3
Ability to manage illness	1	1.3

Abbreviations: AED, automated external defibrillator.

Table 15. Therapeutic Interventions

Variable	Number	Percent
Development of rehab plans/protocols	46	60.5
Modality application	42	55.3
Modality selection	33	43.4
Instruction of patient on proper exercise technique	28	36.8
Manual therapy (massage, trigger point, myofascial)	16	21.1
Flexibility exercises	16	21.1
Modalities	15	19.7
Cryotherapy/cryokinetics	15	19.7
Electrical stimulation modalities	14	18.4
Thermotherapy	14	18.4
Ultrasound/diathermy	13	17.1
Joint mobilizations	12	15.8
Modality positioning/draping of patient	12	15.8
Operation of rehab equipment (bike, treadmill, ergometer)	12	15.8

Table 15. Therapeutic Interventions

Variable	Number	Percent
Pharmacology	12	15.8
Sport specific exercises	12	15.8
Balance and proprioception exercises	11	14.5
Cardiovascular fitness exercises	11	14.5
Muscular strength exercises	11	14.5
Progression of rehab plans/protocols	11	14.5
Strength and conditioning exercises	11	14.5
Adjustment of rehab protocol	10	13.2
Recognition of over-the-counter medication	9	11.8
Modality parameter adjustment	8	10.5
Biofeedback, trans-cutaneous electrical stimulation, iontophoresis	8	10.5
Traction, compression, continual passive motion machines	8	10.5
Operation of isokinetic dynamometer	8	10.5
Whirlpool	7	9.2
Educates patient regarding modality use	6	7.9
Agility exercises	6	7.9
Isotonic exercises	6	7.9
Muscular endurance exercises	6	7.9
Muscular power exercises	6	7.9
Plyometric exercises	6	7.9
Therapeutic exercise	6	7.9
Modality selection due to inflammatory response	5	6.6
Aquatic therapy	5	6.6
Lower extremity rehab techniques	5	6.6
Spine exercises	5	6.6
Upper extremity rehab techniques	5	6.6
Muscle energy techniques	4	5.3
Core/trunk exercises	4	5.3
Isometric exercises	4	5.3
Soft tissue techniques	4	5.3
Determines treatment plan from diagnosis	3	3.9
Balance and physioball exercises	3	3.9
Assessment of posture, ergodynamics, and biomechanics	3	3.9
Sets appropriate goals for patient	2	2.6
Mechanical modalities	2	2.6
Outcome assessment of modality use (disease and patient oriented)	2	2.6
Neuromuscular techniques	2	2.6
Muscular speed exercises	2	2.6
Graston techniques	1	1.3
Infrared modalities	1	1.3
Pilates	1	1.3
Ergonomic exercises	1	1.3
Open/closed kinetic chain exercises	1	1.3
Strain/counterstrain	1	1.3

Table 15. Therapeutic Interventions

Variable	Number	Percent
Stretching techniques	1	1.3
Makes appropriate treatment decisions	1	1.3
Wholistic approach to treatment	1	1.3

Table 16. Psychosocial Strategies and Referral

Variable	Number	Percent
Makes appropriate referrals ^a	27	35.5
Recognition of need for psychological intervention	22	28.9
Use of psychological motivation techniques	13	17.1
Describe the emotional response to a catastrophic event	3	3.9
Management of psychological intervention	3	3.9
Addresses psychosocial factors of pain assessment	2	2.6

^a Also listed under content area Clinical Examination and Diagnosis

Table 17. Healthcare Administration

Variable	Number	Percent
Written documentation skills (use of SOAP, between stakeholders)	54	71.1
Follows policies and procedures (site, student handbook)	39	51.3
Maintains patient confidentiality ^a	36	47.4
Uses appropriate medical terminology	22	28.9
Administrative skills (computer use, filing)	21	27.6
Knowledge of athletic training supplies	17	22.4
Facility management (neat, clean, organized)	15	19.7
Executes duties within the scope of an athletic training student ^b	14	18.4
Understands the role of certified athletic trainer ^b	14	18.4
Recognizes the unique skills and abilities of others ^b	11	14.5
Identifies risk to develop a management plan	10	13.2
Understands their limitations (as an athletic training student) ^b	9	11.8
Knowledge of health insurance	9	11.8
Evaluation of facility design	5	6.6
Uses appropriate anatomical terminology	5	6.6
Understands facility layout	4	5.3
Recognition of financial implications	4	5.3
Development of an emergency action plan	3	3.9
Evaluation of sports medicine budget	2	2.6
Educates others on the role of certified athletic trainers	2	2.6
Uses appropriate injury related terminology	2	2.6
Assesses the value of athletic training services	2	2.6
Provides appropriate supplies	1	1.3
Uses appropriate directional terminology	1	1.3

Abbreviations: SOAP, subjective objective assessment plan.

^a Also listed under FBPP Primacy of the Patient

^b Also listed under FBPP Team Approach to Practice

Table 18. Professional Development and Responsibility

Variable	Number	Percent
Practices in a legally competent manner ^a	26	34.2
Mentor to fellow students and patient	24	31.6
Complies with the NATA COE and BOC SPP ^b	18	23.7
Abides by HIPAA and FERPA ^c	13	17.1
Understands the roles of others in the delivery of healthcare services ^d	13	17.1
Self-evaluates strengths/weaknesses	10	13.2
Understands consequences for violating laws that govern athletic training ^b	9	11.8
Advocates for the profession ^e	9	11.8
Sets goals with preceptor in a timely manner	8	10.5
Understands consequences for violating the NATA COE and BOC SPP ^b	6	7.9
Professional development responsibilities	6	7.9
Disseminates new knowledge to peers/patients ^f	4	5.3
Knowledge of professional documents (Competencies, RD/PA)	4	5.3
Accesses professional journals ^f	1	1.3
Demonstrates service	1	1.3

Abbreviations: NATA, National Athletic Trainers' Association; COE, Code of Ethics; BOC, Board of Certification; SPP, Standards of Professional Practice; HIPAA, Health Information Portability and Accountability Act; FERPA, Family Educational Rights and Privacy Act; RD, role delineation study; PA, practice analysis.

^a Also listed under FBPP Legal Practice

^b Also listed under FBPP Ethical Practice

^c Also listed under FPPP Professional Development and Responsibility

^d Also listed under FBPP Team Approach to Practice

^e Also listed under FBPP Professionalism

^f Also listed under FBPP Advancing Knowledge

Table 19. "Other" skills

Variable	Number	Percent
Follows instructions	32	42.1
Implements advanced skills into practice	23	30.3
Problem solving skills	14	18.4
Independent thinking	12	15.8
Growth/progress	11	14.5
Stress management	11	14.5
Decision making	8	10.5
Knowledge	7	9.2
Knowledge (level appropriate)	6	7.9
Pre/post practice activities (set up, break down)	6	7.9
Reflective thinking	5	6.6
Works diligently to gain proficiency in skills	4	5.3
Knowledge (orthopedic surgery general procedures)	2	2.6
Psychomotor skills	2	2.6
Quality of work	2	2.6

Table 19. “Other” skills

Variable	Number	Percent
Faith awareness	1	1.3
Followed ICEP appropriately	1	1.3
Knowledge (admits when lacking appropriate knowledge/answers)	1	1.3
Ability to multi-task	1	1.3
Develops a personal philosophy	1	1.3
Servant leadership	1	1.3
Stamina/strength to perform job duties	1	1.3

Abbreviations: ICEP, Individual Clinical Education Plan.

Research Question Four

To determine the type of feedback being offered on evaluation forms, descriptive statistics were calculated for each feedback type variable. Results are presented in Table 20.

Table 20. Feedback type

Variable	Number	Percent
Numerical score on provided scale (quantitative)	75	98.7
Comments section(s) (qualitative)	64	84.2
Strengths/weaknesses/areas to improve section (qualitative)	54	71.1
Clinical goals section (met or future) (qualitative)	16	21.1
Visual analog scale (quantitative)	1	1.3

Chapter V

Discussion

Purpose

The purpose of this study was to determine what professional skills and behaviors were being evaluated by preceptors during formal evaluation sessions of athletic training students enrolled in CAATE accredited programs. A secondary purpose of this study was to describe the type of feedback and frequency in which it is given to the students during clinical rotations.

Sample Demographics

PDs from all CAATE accredited undergraduate and master's programs were solicited with the intent of obtaining a representative sample based on several institutional demographics. A recent study by Carr and Volberding⁴³ presented the most up to date report on population demographics. However, the profession of athletic training education has evolved in the past five years and current institutional demographics could potentially be different than those previously published. Based on the most recent literature available, the sample of participating institutions for this study does appear to be representative for the population with participation from Division III and NAIA institutions being slightly below and above average respectively. The non-representativeness of the sample was not perceived to negatively or positively affect the results of the study.

Response Rate

A total of 76 (20%) out of 380 targeted institutions participated by providing copies of evaluation forms for this study. Although there is no documented minimally acceptable response rate, 20% appears to be low for this type of research. A recent study by Carley-Baxter et al⁴⁸ surveyed editors and co-editors of scholarly journals across several fields. Participants in this

study reported unwritten “rules of thumb” for survey response rates ranging anywhere between 16% and 91% based on the field of study. Participants in this study also reported an acceptance rate of 92.1% for article submissions stating a response rate of 25% or less. Participants in this study went on to rank other measures of survey quality. In addition to response rates, the four highest measures of survey quality were sampling methods, questionnaire design, methods, and representativeness.

The timing of this study may have caused the low PD response rates. The solicitation of PDs for participation in this study took place during the end of the academic year and beginning of the summer break. It was indicated through automatic email replies and voicemail messages that many PDs would be out of the office until the beginning of the next fall semester, leaving them unavailable to participate in this study. Starting the solicitation process two months prior to the end of the academic year might have yielded a higher response rate.

Research Question One

Results of this study indicated that the use of preceptors to evaluate both professional behaviors and clinical skills was a commonly accepted practice. All 76 (100%) participants indicated that preceptors provided ATSS with a formal performance evaluation at the end of each clinical rotation, while 65 (85.5%) programs reported conducting mid-semester evaluations. A small number of programs are choosing to conduct additional formal evaluation sessions at the beginning of ATSS’ clinical rotations (n=5) and 12-week point in the semester (n=1). It appears that conducting both a mid and end of semester evaluation is the minimally accepted standard. The practice of offering feedback at the beginning of a rotation is supported by the literature.²² Early feedback in a clinical rotation allows ATSS and preceptors to establish a culture of ongoing

communication regarding clinical performance, which can lead to enhanced professional growth and development.

Several programs require preceptors to fill out a brief evaluation of student performance as part of a weekly (n=1) and bi-monthly (n=3) time card. The number of items to be evaluated on these forms ranged from 6 to 18 and consisted of mostly professional behaviors and a few skills. PDs at institutions requiring weekly and bi-monthly evaluations stated this practice was a way of ensuring that preceptors and students were discussing things as they came up. This technique is supported in the literature³⁴ as it ensures that opportunities for learning are not wasted.

The results regarding the frequency of feedback sessions are consistent with suggestions within the literature stating that feedback should be provided prior to the end of rotations.³⁴ The majority (85.5%) of programs require formal feedback multiple times per rotation, with a small percentage of programs (13.2%) requiring formal evaluations sessions in addition to the end and mid-rotation evaluations.

Research Question Two

Figure 1 displays the proportionality of professional behaviors that were currently being evaluated by ATPs along with the distribution of behaviors per domain of FBPP. In comparison to the other five domains, two of the FBPP domains appeared to have a higher incidence of evaluation. Behaviors in relation to the domains Team Approach to Practice and Professionalism were currently being emphasized on performance evaluation forms more than the other five domains of FBPP. One possible reason for this was the inclusion of variables related to ATSS' communication abilities. The description for the Team Approach to Practice domain includes the examples “work with others in effecting positive patient outcomes” and “include the patient

(and family, where appropriate) in the decision-making process”. Based on that description, the variable communication as it related to various stakeholders (preceptor, patient/athlete, other healthcare professionals, peers, administrators, and family members) was categorized under this domain. The evaluation of ATs’ ability to communicate with others accounted for a significant number of evaluated items in this category. The description of the Professionalism domain includes the example of “demonstrate effective interpersonal communication skills”. For that reason, many variables in relation to ATs’ communication abilities (overall communication skill, proper tone, command of the English language, speaks with tact, diplomacy, and respect, communicates in a timely manner) were categorized in this domain. Removing all variables related to communication skills from the Team Approach to Practice and Professionalism areas might reveal a more proportional evaluation of the FBPP across the seven domains.

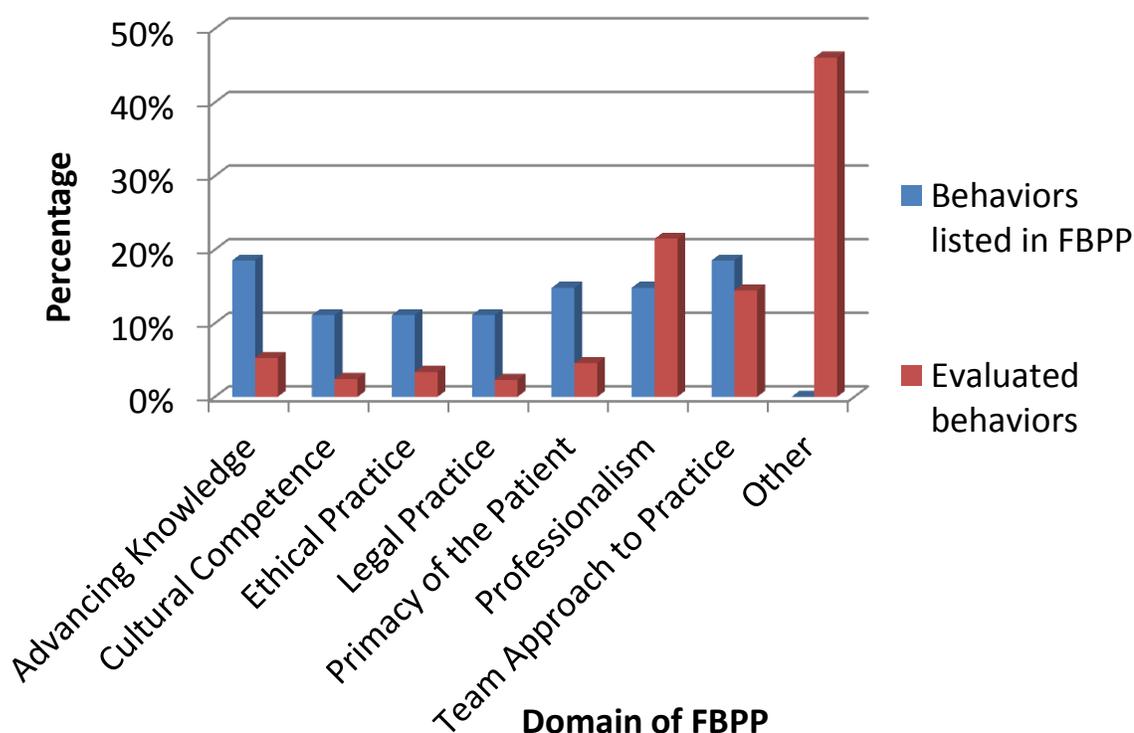


Figure 1. Proportionality of professional behaviors. Abbreviation: FBPP, Foundational Behaviors of Professional Practice.

Professional behaviors listed under the category “other” account for almost half of all evaluated behaviors. An argument could be made that many of the variables included in this category could be categorized or labeled under the Professionalism domain. Behaviors such as: displaying initiative, being punctual, having a positive attitude, being reliable/dependable, and being responsible (among others), could all be defined as characteristics of a “good professional”. However, defining professionalism can be a difficult task as there are many differing opinions about what it means to “be professional”. For that reason, only those behaviors identified in close relation to the described behaviors in the Competencies (advocates for the profession, demonstrates honesty and integrity, exhibits compassion and empathy, and demonstrates effective interpersonal communication skills) were classified under the Professionalism domain of FBPP.

According to Carr,¹² the perception of many employers was that new graduates of ATPs are lacking the following behaviors and skills: communication, decision making/independence, initiative, confidence, and humility/ability to learn from mistakes. Despite this perception, students are being evaluated and provided with feedback by preceptors regarding many of these behaviors and skills. ATs’ abilities to communicate are evaluated in a number of different ways making it difficult to quantify the number of programs evaluating communication. Most of the programs measured some aspect of communication. There appeared to be a split between programs that evaluate communication with others and those that evaluate individual aspects of communication ability or skill. Decision making (10.5%) and independent thinking (15.8%) were being evaluated at a small number of institutions. Initiative (81.6%) had one of the highest incidences of evaluation, second only to appropriate dress/professional appearance (84.2%). Self-confidence (55.3%) was evaluated in just over half of the ATPs. Although not directly

related, concerning the perceived lack of humility/ability to learn from mistakes of new graduates, the behavior “acceptance of criticism” was being evaluated in a majority of programs (67.1%). The argument can be made that the expectations, regarding these behaviors and skills identified as deficient in new graduates, differ greatly from an ATS to an ATC. While an individual may display excellent self-confidence as a student, their level of self-confidence as a newly certified AT might change considerably in a new role. The same could be said for initiative as an understanding of roles change from ATS to ATC.

As a whole, the FBPP were being evaluated by preceptors at a small number of institutions. There were 64 individual behaviors categorized under the seven domains of FBPP. Only 20 (31.3%) of those behaviors are being evaluated at more than 20% of the participating institutions. In other words, roughly one third of the behaviors are being evaluated at one fifth of the institutions. Considering the NATA’s statement of instruction and assessment of the FBPP *should* be incorporated into the education program, the incidence of evaluation of the FBPP *should* greatly increase for many institutions.

Research Question Three

The data in Figure 2 shows the proportion of individual skills included in the eight content areas as outlined and described by the *Competencies*. These numbers were calculated by summing the total number of individual items (competencies) listed under each content area, including sub-items. For example, the content area Therapeutic Interventions has 31 competencies listed, but competency TI-11 has six sub-items listed (TI-11 a-f), bringing the total number of competencies for this content area to 37. This graphical representation of the Competencies illustrates the emphasis that should be placed on each content area during the

learning process. In an ideal situation, the frequency of evaluated items per content area would be proportional to the data presented in this figure.

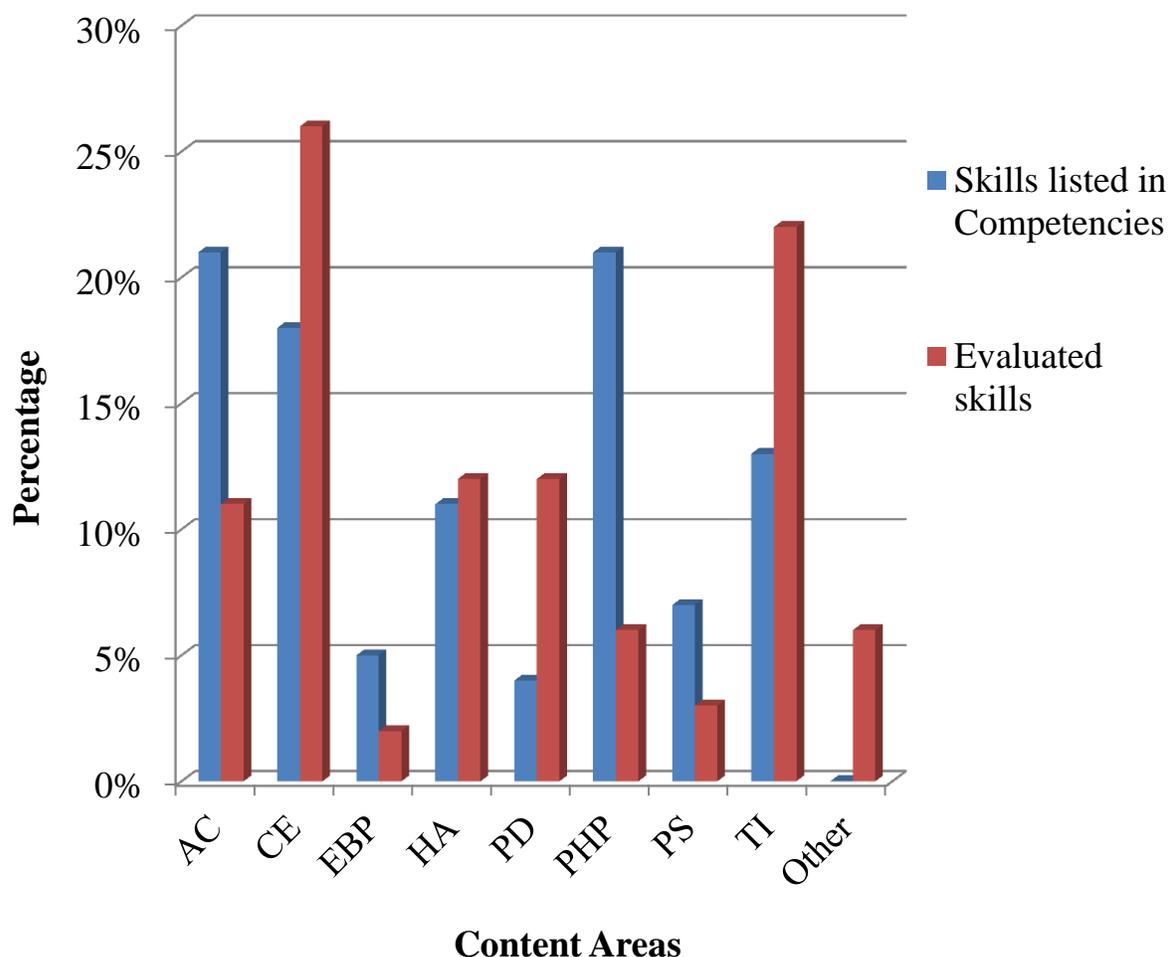


Figure 2. Proportionality of skills. Abbreviations: AC, Acute Care of Injury and Illness; CE, Clinical Examination and Diagnosis; EBP, Evidence-Based Practice; HA, Healthcare Administration; PD, Professional Development and Responsibility; PHP, Prevention and Health Promotion; PS, Psychosocial Strategies and Referral; TI, Therapeutic Interventions.

Figure 2 also displays the proportion of skills that were evaluated by preceptors. Data for this portion of the chart were calculated by summing the total incidence of evaluation for each variable categorized in a specific content area. For example, the content area Psychosocial

Strategies and Referral includes six variables: makes appropriate referrals (27), recognition of need for psychological intervention (22), use of psychological motivation techniques (13), describe the emotional response to a catastrophic event (3), management of psychological intervention (3), and addresses psychosocial factors of pain assessment (2). The sum total of incidence of evaluation across all participating institutions for items in this content area is 70, representing 3% of all evaluated skills.

Based on the data presented in Figure 2, the content areas of Acute Care of Injury and Illness, Evidence-Based Practice, Prevention and Health Promotion, and Psychosocial Strategies and Referral appear to be under-evaluated, while the content areas Clinical Examination and Diagnosis and Therapeutic Interventions appear to be over-evaluated. The content areas Healthcare Administration and Professional Development and Responsibility appear to be evaluated at a proportional rate in comparison to the *Competencies*. According to Donahue, ATCs felt their education adequately prepared them in the areas of acute care of injury and illness, evaluation and assessment, risk management, injury prevention, and therapeutic modalities.¹³ With the exception of acute care of injury and illness, results of this study illustrated that students were given excessive feedback in areas where ATCs were reporting feeling more prepared and confident in their job performance. Areas where ATCs reported feeling less prepared such as pharmacology,¹³ psychosocial intervention and referral,¹³ counseling of athletes,¹⁴ and education of athletes,¹⁴ appear to be evaluated by preceptors less frequently.

The content area Clinical Examination and Diagnosis contains the most frequently evaluated set of skills (26% of all skills evaluated). The skill of evaluating injuries is being assessed in many ways. Several evaluation forms require a rating for the evaluation of each joint

of the body, while some evaluation forms assess general evaluation skills such as history taking, observation, palpation, range of motion, special tests, and neuro-vascular function. Because they are being evaluated in many different ways, it is difficult to report on how many schools are evaluating ATSS' assessment and evaluation skills.

The content area Therapeutic Interventions contains the second most frequently evaluated skills (22%). The Therapeutic Interventions content area consists mainly of knowledge and skill in the areas of rehabilitation, therapeutic modalities, and therapeutic medications. Knowledge, use, and skill with therapeutic modalities is heavily evaluated by preceptors, with 12 of the top 15 most frequently evaluated skills in this area relating to therapeutic modalities. Of all skills evaluated in the Therapeutic Interventions category, knowledge and use of therapeutic medications account for a small percentage (4%) of evaluated items (pharmacology and recognition of over-the-counter medications).

Content areas Prevention and Health Promotion and Healthcare Administration are tied for the third and fourth most frequently evaluated areas. Variables categorized in the Prevention and Health Promotion content area consist primarily of taping, wrapping, padding, and equipment related skills. Another focus in the Prevention and Health Promotion area was recognition, assessment, and management of environmental conditions and illnesses. Variables in the Healthcare Administration content area primarily skills related do written documentation, use of appropriate terminology, aspects of facility management, and use of athletic training supplies.

Despite the content area Acute Care of Injury and Illness being identified as a strength of many ATCs,¹³ skills in this area were seldom evaluated. While skills such as bracing/splinting (44.7%), and knowledge/use of the emergency action plan (42.1%) were frequently evaluated,

other necessary and important skills such as vital sign assessment (22.4%), spine boarding/patient transfer (17.1%) and use of the emergency equipment (automated external defibrillator, EpiPen, and oxygen tank) (10.5%) were not being evaluated at the same frequency. ATSS' skill in concussion management (3.9%) is rarely being evaluated by preceptors.

Many of the skills in the Professional Development and Responsibility content area directly overlap with the FBPP making the incidence of evaluation difficult to quantify. To compound this problem, many of the skills categorized as "other" could also relate to this content area. Several of the most frequently evaluated variables such as implements advanced skills into practice, problem solving skills, independent thinking, growth/progress, and reflective thinking could all potentially be categorized as part of the professional development and responsibility of ATSS. However, at this time, many of the skills in this content area focus on the ATS's ability to comply with state and national regulations such as the Health Information Portability and Accountability Act (HIPAA), Family Educational Rights and Privacy Act (FERPA), and those established by the CAATE, NATA, and BOC.

Very few skills are being evaluated in the Psychosocial Strategies and Referral content area. Total incidence of evaluation for this content area accounts for 3% of all evaluated skills. It has been documented by Donahue¹³ and Weidner et al¹⁴ that many athletic trainers are lacking the necessary skills in this area. Results of their studies along with the results presented here suggest that evaluation of skills in this area needs to increase.

The Evidence-Based Practice content area was first introduced to the Competencies in 2012. The concept of EBP has been a focus of several allied healthcare professions for several years, but seems to be a new focus in the profession of athletic training. Many current preceptors went through the educational process receiving no instruction or assessment on the use of EBP

principles.⁴⁹ Since the release of the 5th Edition Educational Competencies, EBP principles have been incorporated into both classroom and clinical instruction. At less than 2% of all evaluated skills, it appeared that the use of EBP principles by ATSSs in the clinical setting is not frequently evaluated by preceptors. Over time as the number of preceptors receiving formal training and education on EBP concepts increases, the evaluation of EBP related skills is likely to increase as well.

The category “other” skills (6%) accounted for a small portion of total skills evaluated. This category contained several variables that were not identified as relating directly to a specific content area, and were often applicable to multiple content areas. Several skills such as an ATSSs’ ability to follow directions, implement advanced skill into practice, solve problems, and think independently, can often be applied along with skills listed in other content areas.

Research Question Four

Forms from all 76 participating institutions required quantitative feedback to be given to the ATSS. There were several variations of numerical scales (3 point, 4 point, 5 point, 6 point, 10 point, and 0-100% score) that were used to rank ATSS performance. Only one institution did not offer a numerical ranking and provided a measurement of performance on a visual analog scale. Several studies^{27,34,37} have suggested that this type of feedback is not beneficial to students, and preceptors should offer qualitative feedback instead.

Qualitative feedback, as defined for this study, has been proven to be the most effective type of feedback.^{36,38} Many of the evaluation forms collected for this study allow for the provision of qualitative feedback in the form of a comments section (84.2%), a section for strengths/weaknesses/areas for improvement (71.1%), and a section to discuss clinical goals (21.1%). Comments sections, although seldom noted next to individual items, were most often

noted at the end of evaluation forms. According to Gigante et al²², the narrative and descriptive feedback given in these sections which describes ATSs performance was the most valuable type of feedback. With the inclusion of a “strengths” section on evaluation forms, preceptors are given the opportunity to provide ATSs with constructive feedback. According to Curtis et al²⁹ this type of feedback adds to their professional knowledge base and enhances performance in the clinical setting. The discussing of clinical goals, both those that have been met and those set for the future, can be a valuable experience for ATSs. By discussing clinical goals, both those that have been met and those set for the future, preceptors are able to provide reassurance about achieved competency, guide future learning, reinforce positive actions, identify and correct areas for improvement, and promote reflection, all of which have been found²² to have a significant impact on the development of the student.

Summary

The findings of this study indicated that preceptors were typically being utilized at the middle and end of clinical rotations by ATPs to assess students’ clinical performance in regard to professional behaviors and skills. The results of this study illustrated what ATPs value and place an educational focus or emphasis upon relative to feedback. The results of this study were similar to much of the literature in that many of the areas in which athletic trainers have been identified as unskilled or lacking preparation, seem to be the areas in which students are least often evaluated and provided with feedback. PDs and CCs can use the results of this study to assess current practices at their institutions and decide which evaluation and feedback strategies are best suited for their students.

Chapter VI

Summary, Conclusions, and Recommendations

Summary

Much is known about the feedback process and what determines good feedback. A well-defined list of necessary and valued professional behaviors and skills exists within professional documents of the Athletic Training profession. What is not defined is the best method or manner in which to conduct formal evaluation of these behaviors and skills, or a description of what professional behaviors and skills are actually being evaluated. There appears to be a large number of people, both employers and employees that feel ATs are not being adequately prepared to enter the workforce, and that certain content areas of athletic training could be emphasized more throughout the educational experience. Educational experiences and feedback provided by preceptors can have a major impact on the professional development of students. Because of this potential to have a major impact, this study was done to identify which professional behaviors and skills are being evaluated by preceptors. By identifying the current trends of evaluation practices of the profession, PDs and CCs can assess practices at their institutions and decide which evaluation and feedback strategies are best suited for their students.

This was a descriptive study designed to determine what professional behaviors and skills were being evaluated by preceptors and also the type and frequency in which formal feedback was given in the clinical setting. Descriptives regarding the frequency of evaluated professional behaviors, skills, and feedback type were obtained. Based upon the results of the study, the following conclusions and recommendations were made.

Conclusions

There were six conclusions made based on the findings of this study.

1. Institutional autonomy among CAATE accredited ATPs has led to a wide variety of methods for the evaluation of ATSS' clinical performance regarding professional behaviors and skills by preceptors.
2. The majority of ATPs currently conduct a middle and end of rotation evaluation. The literature suggests that frequent and immediate feedback is most effective. Programs should ensure that preceptors are providing students with frequent and immediate feedback in addition to the conventional middle and end of clinical rotation evaluation sessions.
3. To ensure new graduates are professionally prepared and viewed positively by others, the use of preceptors to evaluate the FBPP needs to increase.
4. ATPs are choosing to evaluate students on many professional behaviors unrelated to an established domain of the FBPP. The NATA and CAATE should consider expanding the descriptions of the FBPP to include many of the behaviors currently being evaluated.
5. Although opportunities for qualitative feedback do exist on most evaluation forms, the majority of feedback regarding professional behaviors and skills is given in a less helpful quantitative manner. PDs and CCs may want to revise their clinical performance evaluation forms to include more opportunities for preceptors to provide qualitative feedback to ATSS.
6. PDs and CCs should consider the proportion of skills and behaviors as outlined in the *Competencies* to determine what evaluation practices are best suited for their institution

and identify if their practices are aligned with the current values and expectations of the profession.

Recommendations

Based upon the findings of this study, the following recommendations are made for future studies:

1. Examine the relationship between professional preparedness (as ATC) and preceptor feedback (as ATS).
2. Examine the relationship between length of clinical rotation and frequency of formal performance evaluation sessions.
3. Determine if the content and frequency of formal performance evaluation varies across institutional demographics.
4. Determine what methods other than preceptor evaluation are being utilized by ATPs to evaluate professional behaviors and clinical skills.
5. Determine what methods are being utilized by ATPs to assess the CIPs.
6. Determine to what extent role strain of ATCs has an effect on ATPs use of preceptors for the evaluation of professional behaviors and clinical skills.

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Appendix A

Dear Program Director,

My name is Ben Timson and I am a Doctoral student at the University of Kansas working with Dr. W. David Carr.

Why am I contacting you?

I am interested in studying the evaluation of professional behaviors and skills by preceptors in the clinical setting.

What am I asking you to do?

1. Please share with me via email attachment your program's current assessment forms used by preceptors to evaluate the clinical performance of students (.doc, PDF, URL link, etc...)
2. Please respond to this message and let me know when these forms are used to evaluate students throughout their clinical rotations (e.g. 3 week eval, mid-rotation, end of rotation, etc...)

IRB approval has been granted for this study.

Thank you very much for your time, which I know is very valuable as the school year is coming to an end. I sincerely appreciate your willingness to assist me with my dissertation and advance the profession through the research process. I will follow up this email within the next few weeks. Should you have any questions or concerns, feel free to contact me via email at timson@ku.edu or by phone at (785) 864-0768.

Sincerely,

Ben Timson

Ben Timson, MEd, ATC, LAT
Doctoral Teaching Assistant
Health, Sport, and Exercise Science
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1301 Sunnyside Ave, 308B Robinson
Lawrence, KS 66045
(785) 864-0768

Appendix B

Dear (first name of PD),

Hello. My name is Ben Timson and I am sending this email as a follow up request for your assistance with data collection for my dissertation research. I am working with W. David Carr and Phillip Vardiman to 1.) determine how athletic training education programs assess or evaluate the AT students on professional behaviors and skills; and 2.) assess the preceptor's use of the institutional instruments to provide feedback to the AT students on professional behaviors and skills. Collectively, we hope this data will provide insights on best practices for evaluation of AT students across the profession; and, that this information will help preceptors provide appropriate feedback and reinforce critical behaviors for AT students.

Your name and institution will not be associated with the findings in any way. As the primary investigator, only I will have access to the forms you provide. We are not evaluating your program's assessment materials/protocols or measuring the quality of your procedures. If you are willing to assist in this research project, please have the individual in charge of student evaluations email the following:

1. A copy of the form(s) that preceptors use to formally evaluate students' clinical performance (PDF, .doc, URL link, etc...)
2. The schedule for evaluations during the students' clinical rotations (e.g. mid rotation, end of rotation, etc...). This can be written within the body of the email or attached as a separate document.

I plan on using the forms to generate a list of professional behaviors and skills that programs are currently evaluating and then describe the trends across the profession. With the data I intend to report on the content and frequency of evaluated skills and behaviors. For example:

1. X out of 380 professional programs evaluate punctuality
2. X number of programs provide students with a mid-rotation evaluation

Please feel free to contact me with any questions you have regarding this research project. I will conduct follow up phone calls in the upcoming weeks to continue with my data collection efforts. If you do not wish to participate in this study, please let me know.

Thank you for your time and consideration.

Sincerely,

Ben

Ben Timson, MEd, ATC, LAT
Doctoral Teaching Assistant
Health, Sport, and Exercise Science
University of Kansas
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Lawrence, KS 66045
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Appendix C

Template:IRB_T_Post-Review_NotHumanResearch

Notification of Not Human Research Determination

To: Benjamin Timson

Link: [STUDY00000921](#)

P.I.: [Benjamin Timson](#)

Title: Performance Evaluation Feedback

Description: The committee reviewed this submission and assigned a determination of Not Human Research. For additional details, click on the link above to access the project workspace.

eCompliance : Conflict of Interest and Human Subjects Research

[KU Lawrence and Edwards campuses](#)

[KU Medical Center, Kansas City](#) □ [KU School of Medicine, Wichita](#)

[Contact Information for each Campus](#)

Appendix D

Athletic Training Student Performance Evaluation and Feedback

Informed Consent Statement

The Department of Health, Sport, and Exercise Science at the University of Kansas supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time without penalty.

We are conducting this study to better understand the current performance evaluation and feedback practices for athletic training students in the clinical setting. You are being asked to provide documentation of your evaluation forms and information regarding the frequency of evaluations.

Participation in this study should cause no more discomfort than you would experience in your everyday life. Your participation is solicited, although strictly voluntary. Neither your name nor your institution's name will be associated in any way with the research findings. At no time throughout the research process will any individuals other than the investigators have access to the documents collected. If you would like additional information concerning this study before or after it is completed, please feel free to contact us by phone or mail.

The sharing of your evaluation documents indicates your willingness to participate in this project and that you are over the age of eighteen. If you have any additional questions about your rights as a research participant, you may call (785) 864-7429 or (785) 864-7385 or write the Human Subjects Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7563, email irb@ku.edu.

Sincerely,

Ben Timson, MSED, ATC
Principal Investigator
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J. Leon Greene, PhD
Faculty Advisor
University of Kansas

W. David Carr, PhD
Missouri State University

Signature_____ Date_____