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Perceived Levels of Frustration During Clinical Situations in Athletic Training Students

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Context: Athletic training students (ATSs) are involved in various situations during the clinical experience that may cause them to express levels of frustration. Understanding levels of frustration in ATSs is important because frustration can affect student learning, and the clinical experience is critical to their development as professionals.

Objective: To explore perceived levels of frustration in ATSs during clinical situations and to determine if those perceptions differ based on sex.

Design: Cross-sectional study with a survey instrument.

Setting: A total of 14 of 19 professional, undergraduate athletic training programs accredited by the Commission on Accreditation of Athletic Training Education in Pennsylvania.

Patients or Other Participants: Of a possible 438 athletic training students, 318 (72.6%) completed the survey.

Main Outcomes Measure(s): The Athletic Training Student Frustration Inventory was developed and administered. The survey gathered demographic information and included 24 Likert-scale items centering on situations associated with the clinical experience. Descriptive statistics were computed on all items. The Mann-Whitney U was used to evaluate differences between male and female students.

Results: A higher level of frustration was perceived during the following clinical situations: lack of respect by student-athletes and coaching staffs, the demands of the clinical experience, inability of ATSs to perform or remember skills, and ATSs not having the opportunity to apply their skills daily. Higher levels of frustration were perceived in female than male ATSs in several areas.

Conclusions: Understanding student frustration during clinical situations is important to better appreciate the clinical education experience. Low levels of this emotion are expected; however, when higher levels exist, learning can be affected. Whereas we cannot eliminate student frustrations, athletic training programs and preceptors need to be aware of this emotion in order to create an environment that is more conducive to learning.

Key Words: scaffolding, professional socialization, athletic training education

Key Points

- Athletic training students perceived having higher levels of frustration about how they are respected by various constituents, their performance of and ability to remember skills and information, the opportunity to apply skills daily, and the demands of the clinical obligation.
- Whereas frustration cannot be eliminated, athletic training programs and preceptors should recognize these frustrations, discuss strategies to help mitigate their occurrences, and help create more conducive environments for learning and student success.

More than half of the entry-level professional development of athletic training students (ATSs) is perceived to be attributed to the clinical setting.[1] However, the transition from the preclinical to clinical years can be difficult for them. They are expected to be active participants during this time and to apply what they learn each day in the classroom with the people they treat.[2] In addition, ATSs are learning various behaviors pertaining to the complex demands of the profession, such as time management, communication, and administrative tasks, through mentorship from their preceptors.[2] These transitions and social interactions have been shown to cause differing levels of negative emotional responses by students in other allied health professions.[3–7] Understanding students' perceived levels of emotional response during clinical situations is important because researchers have found that negative emotional responses may affect student learning, decision-making, and caring capabilities.[4,8–10] In addition, understanding the clinical experience from the perception of students is important because students can provide insightful information.[11]

In a qualitative study, Heinerichs and Curtis[12] showed that frustration exists within ATSs during the clinical experience. However, the level of frustration during this time has not been evaluated in ATSs. Researchers[3–6,13] in other health professions, such as medicine and nursing, have examined levels of emotion in clinical students using the descriptors of stress and anxiety. Stress is something that happens to someone, whereas anxiety and frustration are the emotions experienced due to the stressor. *Anxiety* is the emotion experienced when a person feels threatened by a stressor, and *frustration* is the emotion that occurs when a person cannot manage the stressor. ATSs have many responsibilities and daily interactions during the clinical experience, and we believed frustration best describes what a student may perceive during this time. The perceived

Table 1. Operational Definitions for the Constructs of the Athletic Training Student Frustration Instrument

Construct	Definition
Demand	Ability of ATSs to balance clinical, schoolwork, and personal obligations, as well as daily responsibilities, during the clinical experience
Interaction	Communication with student-athletes and ATSs and the performance of tasks
Respect	Ability of coaches, student-athletes, or preceptors to value a student's role as an ATS
Skill	Confidence of ATS in performing a skill or skills or ability to perform, remember, or recognize a previously learned skill or skills
Supervision	Ability of preceptor to provide feedback, explanations, and opportunities for ATSs to apply knowledge or skills and to respond to athletes' needs

Abbreviation: ATS, athletic training student.

level of frustration is important to explore because higher levels of negative emotions can affect student learning.[14,15]

Social cultural learning theory can be used to appreciate how frustration affects learning.[16] This theory states that learning is a process that results through the development of social interactions with others and within oneself.[16] Athletic training programs (ATPs) and preceptors have a responsibility to promote interactions that allow students to build on their previous experiences through guided autonomy (ie, scaffolding)[17] and to professionally socialize[18] them into athletic training so they can understand what is expected. The ATSs are involved in social interactions during the clinical experience that expose them to the demands of the profession while promoting the use of higher-order thinking skills (ie, evaluation and synthesis) as they apply their knowledge and abilities each day. These interactions can cause students to experience frustration that can affect their performances because it activates the flight-or-fight response,[14] resulting in a positive or negative outcome.

Students perform well with a moderate level of negative emotion, such as frustration; however, when frustration levels are too high or low, performance is decreased.[15] Given that negative emotions can be detrimental to learning and performance, it is critical to understand students' level of frustration during clinical experiences, which occur when more than half of an ATS's entry-level professional development is achieved.[1] Frustration will always exist; however, understanding when higher levels of this emotion exist during clinical situations can help ATPs, preceptors, and ATSs create an environment more conducive to learning. Therefore, the purpose of our study was to determine perceived levels of frustration in ATSs during specific clinical situations and whether those perceptions differ based on sex.

METHODS

A cross-sectional, descriptive survey study design was used to explore perceived levels of frustration in ATSs.

Participants

We used a convenience-sampling technique to recruit participants from 14 of 19 undergraduate programs accredited by the Commission on Accreditation of Athletic Training Education (CAATE) in Pennsylvania. All ATSs enrolled in a clinical education experience during the spring of 2008 were invited to participate. A *clinical education experience* was defined as an experience that is associated with a course grade and involves the application of athletic training skills under the supervision of a preceptor. All participants provided written informed consent, and the study was approved by the West Chester University Institutional Review Board.

Instrumentation

Creation of the Athletic Training Student Frustration Instrument. We reviewed similar surveys on negative emotions from nursing,[3,5,6,13,19] medicine,[4,7,20,21] and physical therapy[22] to gain a sense of their relative descriptors. However, we needed to develop the Athletic Training Student Frustration Instrument (ATSFI) in the context of athletic training. Qualitative data on a relatively unexplored topic can be used to design a subsequent quantitative phase of a study.[23] Therefore, we used the qualitative study by Heinerichs and Curtis[12] to develop the ATSFI. Content validity was established by consulting a panel of 4 experts in the field of athletic training education. Three experts had published articles on educational topics, and one was an expert in survey research in athletic training education. The modifications from the experts included a revision of the Likert scale from a 5-point to a 4-point scale, with 4 indicating *extremely frustrated*; 3, *very frustrated*; 2, *slightly frustrated*; and 1, *not at all frustrated*. This revision was made to avoid a neutral response.[24] Several question stems were also reworded to ensure clarity of the question being asked.

Construct validity was established by performing a principle component analysis. The factor analysis enabled us to understand which items grouped around certain concepts. The factor analysis revealed 5 loadings ranging from 0.739 to 0.416. The cutoff value for the factor loadings was 0.400 because values less than this are known to not be different. After reviewing the items, we operationally defined 5 constructs (Table 1). The constructs that compose the ATSFI are items centering on 5 types of clinical situations: demand (6 items), interaction (5 items), respect (5 items), skill (4 items), and supervision (9 items). The overall internal consistency of the survey instrument was 0.90.

After the expert panel review, the ATSFI was piloted with 21 ATSs. The purpose of the pilot was to ensure the clarity and readability of the instrument and to determine the length of time needed to complete it. Several modifications were made after the pilot, such as clarifying the instrument's instructions and placing the Likert scale at the top of each page so participants could easily refer to it.

Table 2. Survey Responses by Year in School (n = 314)[a]

Year in School	Respondents, n (%)[b]
Freshman	1 (0.003)
Sophomore	66 (21.02)
Junior	153 (48.72)
Senior	94 (29.93)

[a] Four respondents did not indicate their year in school.
[b] Percentages are rounded.

Procedures

Fourteen directors of undergraduate ATPs in Pennsylvania indicated their willingness to help recruit participants and indicated the number of students that would be enrolled in courses that contained a clinical experience for spring 2008. The maximum possible sample size was 438. Each program director who agreed to facilitate the data collection was sent a packet containing instructions for distributing and collecting the survey; informational letters (informed consent) for each participant; a survey for each participant; and a self-addressed, stamped envelope for the return mailing of completed surveys. Each return envelope was coded to indicate the program so we could identify the source. Program directors were instructed to conduct the survey in a classroom at a time that was convenient for them.

Statistical Analysis

After the survey instruments were completed and returned, we calculated descriptive statistics for each item. Given the ordinal data collected, a Mann-Whitney U test was calculated to identify any differences in levels between male and female ATSs. For all statistical comparisons, the α level was set a priori at less than .05. Data were analyzed using the Statistical Package for the Social Sciences (version 11.0, SPSS, Chicago, IL).

RESULTS

Participants

A total of 318 of 438 (72.6%) surveys were returned. Ages of respondents ranged from 19 to 43 years, with the ages of 288 respondents (90.6%) ranging from 19 to 22 years. Respondents included 208 women (66.20%) and 106 men (33.80%). Four respondents did not indicate their sex. This breakdown of sex is similar to the breakdowns of national statistics reported from a survey published by the CAATE from 2005 to 2006.[25] The respondents by year in school are shown in Table 2. Most respondents (n = 247, 77.7%) were upper-level students (juniors and seniors). More than half of those surveyed (n = 184, 57.9%) reported having completed 3 or more semesters of clinical experiences.

Student Perceived Level of Frustration

The perceived level of frustration reported by the students for various clinical situations is illustrated in Table 3. The situations producing the highest levels of perceived frustration in ATSs were not being respected by coaching staff (2.90 $\pm$ 0.913), student-athletes (2.90 $\pm$ 0.907), and preceptors (2.84 $\pm$ 0.953); balancing clinical obligations with school work (2.74 $\pm$ 0.943); inability to recall previously learned information (2.73 $\pm$ 0.747); performing a previously learned skill incorrectly (2.65 $\pm$ 0.782); and preceptors not allowing them to perform skills associated with their educations (2.61 $\pm$ 0.905). Respondents experienced the lowest levels of frustration when they had too much responsibility during the clinical experience (1.80 $\pm$ 0.849), had a high volume of athletes for whom to provide care on a given day (1.70 $\pm$ 0.785), and did not speak to their preceptors daily (1.56 $\pm$ 0.758). The remaining items were found to be neither high nor low with regard to ATS-perceived level of frustration (Table 3).

Sex Differences in Perception of Frustration

The level of frustration reported by students for their respective sex is displayed in Table 4. In 13 of the 24 items, female ATSs had higher levels of frustration than male ATSs ($P < .05$).

DISCUSSION

Athletic Training Students' Perceived Levels of Frustration

Exploring the levels of frustration ATSs perceived in this study contributes to the understanding of the nature of the clinical experience. Athletic training programs should be concerned about the nature of the clinical experience because more than half of ATSs' professional development takes place during this time.[1,26] As ATSs have their clinical experiences, they are involved in various social interactions that allow them to learn about themselves as aspiring clinicians.[16] Some of these interactions may cause differing levels of frustration within ATSs. Identifying levels of ATS frustration allows researchers to understand how they internalize their emotions. By understanding ATS emotions, ATPs and preceptors can respond to situations that cause higher levels of this emotion and can positively affect ATS learning, decision-making, and caring capabilities during this time.[4,8–10]

Frustrating experiences relating to respect elicited the highest levels of frustration within ATSs. These experiences centered on such issues as lack of respect by coaches, student-athletes, and preceptors. This finding is similar to the finding that nursing students perceived their nonacceptance by staff or being demeaned as high-anxiety events.[5] The preceptors need to understand the power structure of the athletic training clinical setting,[5] which includes coaches, student-athletes, athletic administrators, parents, preceptors, and ATSs. As newcomers to this structure, ATSs are aware of their inexperience and may believe others want their position to be peripheral rather than central.[5] When students become more central in their daily responsibilities, they believe they are more empowered.[5] However, if denied and left on the periphery, they believe they are powerless.[5]

To help mitigate this situation, ATSs need to be assimilated appropriately into the profession by their preceptors.[27] Specifically, constituents within this structure beyond the preceptor, such as the athlete, coach, and athletic administrator, must clearly understand the role of the ATS as a health care provider and not as a person with

Table 3. Athletic Training Students' Perceived Levels of Frustrations in the Clinical Setting (N = 318)[a]

Construct	Statement of Frustration	Mean ± SD	Response, n (%)[a]			
			Not at All Frustrated	Slightly Frustrated	Very Frustrated	Extremely Frustrated
Skill	I am not confident in performing skills.	2.45 ± 0.725	17 (5.3)	167 (52.5)	107 (33.6)	27 (8.5)
	I cannot recall previously learned information.	2.73 ± 0.747	7 (2.2)	122 (38.4)	139 (43.7)	50 (15.7)
	I do not recognize injuries that occur.	2.49 ± 0.777	24 (7.5)	145 (45.6)	117 (36.8)	32 (10.1)
	I perform a previously learned skill incorrectly.	2.65 ± 0.782	14 (4.4)	128 (40.3)	129 (40.6)	47 (14.8)
Supervision	I feel my clinical experience lacks opportunities to apply my education and skills.	2.46 ± 0.984	64 (20.1)	95 (29.9)	109 (34.3)	50 (15.7)
	My preceptor does not allow me to perform skills associated with my education.	2.61 ± 0.905	31 (9.7)	124 (39.0)	102 (32.1)	61 (19.2)
	My preceptor does not provide me verbal feedback on my knowledge and skills during my first year as an athletic training student.	2.47 ± 0.929	45 (14.2)	129 (40.6)	92 (28.9)	52 (16.4)
	My preceptor does not provide me verbal feedback on my knowledge and skills as an experienced athletic training student.	2.52 ± 0.925	44 (13.8)	115 (36.2)	107 (33.6)	52 (16.4)
	My preceptor does not respond to athletes' needs seriously.	2.36 ± 0.991	69 (21.7)	116 (36.5)	83 (26.1)	50 (15.7)
	My preceptor does not want to know what I already know.	2.20 ± 0.866	67 (21.1)	145 (45.6)	80 (25.2)	26 (8.2)
	My preceptor provides no explanation for the type of care that he or she wants me to perform.	2.55 ± 0.903	39 (12.3)	116 (36.5)	112 (35.2)	51 (16.0)
Interaction	I do not speak with my preceptor on a daily basis.	1.56 ± 0.758	185 (58.2)	93 (29.2)	34 (10.7)	6 (1.9)
	My fellow students compete with me for learning opportunities during the clinical experience.	2.04 ± 0.979	115 (36.2)	107 (33.6)	65 (20.4)	31 (9.7)
	Student-athletes complain of being injured when they do not appear to be.	2.34 ± 0.872	46 (14.5)	158 (49.7)	75 (23.6)	39 (12.3)
	Student-athletes do not report their injuries to the athletic training staff and/or athletic training students.	2.21 ± 0.802	57 (17.9)	153 (48.1)	90 (28.3)	18 (5.7)
	I am asked to perform tasks that are not associated with my direct responsibilities as an athletic training student.	2.37 ± 0.960	61 (19.2)	126 (39.6)	83 (26.1)	48 (15.1)
Respect	Athletes express a negative attitude toward me in my role as an athletic training student.	2.58 ± 0.929	42 (13.2)	105 (33.0)	115 (36.2)	56 (17.6)
	Student-athletes do not respect my role as an athletic training student.	2.90 ± 0.907	24 (7.5)	76 (23.9)	126 (39.6)	92 (28.9)
	The preceptors do not respect my role as an athletic training student.	2.84 ± 0.953	29 (9.1)	86 (27.0)	109 (34.3)	94 (29.6)
	The coaching staff does not respect my role as an athletic training student.	2.90 ± 0.913	23 (7.2)	80 (25.2)	120 (37.7)	95 (29.9)
Demand	I cannot balance my clinical obligations with my personal life.	2.58 ± 0.975	40 (12.6)	124 (39.0)	82 (25.8)	72 (22.6)
	I cannot balance my clinical obligations with my schoolwork.	2.74 ± 0.943	32 (10.1)	98 (30.8)	110 (34.6)	78 (24.5)
	I have too much athletic training responsibility during my clinical experience.	1.80 ± 0.849	139 (43.7)	116 (36.5)	50 (15.7)	13 (4.1)
	There is a high volume of athletes to provide care for on a given day.[b]	1.70 ± 0.785	150 (47.3)	121 (38.2)	37 (11.7)	9 (2.8)

[a] Some percentages are rounded.
[b] One participant did not respond to this statement (N = 317).

limited knowledge or skills or as a laborer. Strategies to help foster this understanding include preceptors discussing with all constituents the role of the ATS in advance of the clinical assignment each semester. This discussion will help solidify the ATS's place within the power structure. In addition, preceptors need to allow ATSs to have structured autonomy by making legitimate decisions (ie, more than how to set up a field for practice) and communicating regularly with individuals within the power structure. This structured autonomy can help ATSs to be viewed as competent health care providers.

The ATSs also reported higher levels of frustration when preceptors did not allow them to perform skills associated with their educations. This finding addresses the type of clinical supervision that occurs during a clinical experience. It varies across settings because of preceptor personalities and previous experiences. However, the Approved Preceptor Workshop first proposed in 1996 was created to improve the teaching and evaluation skills of preceptors.[1] Weidner and Henning[28] pointed out that in the field of athletic training, most preceptors are chosen out of convenience and expertise as clinicians and not because of their expertise as

Table 4. Student Frustrations in the Clinical Setting by Sex

Construct	Statement of Frustration	Sex: Male (n = 106), Mean ± SD	Sex: Female (n = 208), Mean ± SD	*P*	Mann-Whitney U
Skill	I am not confident in performing skills.	2.23 ± 0.681	2.58 ± 0.719[a]	<.001	8600.000
	I cannot recall previously learned information.	2.60 ± 0.763	2.80 ± 0.736[b]	.03	9561.500
	I do not recognize injuries that occur.	2.38 ± 0.773	2.54 ± 0.773	.12	10034.000
	I perform a previously learned skill incorrectly.	2.48 ± 0.744	2.75 ± 0.791[b]	.005	9126.000
Supervision	I feel my clinical experience lacks opportunities to apply my education and skills.	2.39 ± 0.949	2.49 ± 0.998	.34	10431.000
	My preceptor does not allow me to perform skills associated with my education.	2.59 ± 0.951	2.61 ± 0.883	.85	10991.000
	My preceptor does not provide me verbal feedback on my knowledge and skills during my first year as an athletic training student.	2.36 ± 0.798	2.60 ± 0.947	.06	9772.000
	My preceptor does not provide me verbal feedback on my knowledge and skills as an experienced athletic training student.	2.36 ± 0.862	2.61 ± 0.947[b]	.02	9482.00
	My preceptor does not respond to athletes' needs seriously.	2.16 ± 0.923	2.47 ± 1.01[b]	.01	9289.000
	My preceptor does not want to know what I already know.	2.07 ± 0.887	2.26 ± 0.853	.05	9729.500
	My preceptor provides no explanation for the type of care that he or she wants me to perform.	2.39 ± 0.866	2.63 ± 0.917[b]	.03	9569.500
Interaction	I do not speak with my preceptor on a daily basis.	1.53 ± 0.744	1.59 ± 0.769	.52	10696.500
	My fellow students compete with me for learning opportunities during the clinical experience.	1.75 ± 0.881	2.19 ± 0.998[a]	<.001	8312.500
	Student-athletes complain of being injured when they do not appear to be.	2.36 ± 0.914	2.33 ± 0.856	.92	11054.500
	Student-athletes do not report their injuries to the athletic training staff and/or athletic training students.	2.02 ± 0.812	2.32 ± 0.783[a]	.002	8907.000
	I am asked to perform tasks that are not associated with my direct responsibilities as an athletic training student.	2.23 ± 0.947	2.44 ± 0.961	.08	9848.000
Respect	Athletes express a negative attitude toward me in my role as an athletic training student.	2.43 ± 0.902	2.66 ± 0.928[b]	.03	9574.000
	Student-athletes do not respect my role as an athletic training student.	2.02 ± 0.812	2.32 ± 0.783[b]	.01	9278.500
	The preceptors do not respect my role as an athletic training student.	2.69 ± 0.975	2.92 ± 0.935[b]	.04	9650.500
	The coaching staff does not respect my role as an athletic training student.	2.69 ± 0.975	3.01 ± 0.862[a]	.007	9148.500
Demand	I cannot balance my clinical obligations with my personal life.	2.53 ± 0.974	2.61 ± 0.967	.54	10682.000
	I cannot balance my clinical obligations with my schoolwork.	2.51 ± 0.955	2.84 ± 0.916[a]	.003	8956.500
	I have too much athletic training responsibility during my clinical experience.	1.69 ± 0.782	1.85 ± 0.875	.15	10092.000
	There is a high volume of athletes to provide care for on a given day.	1.64 ± 0.780	1.73 ± 0.789	.34	10362.000

[a] Significant difference at $P < .01$.
[b] Significant difference according to Mann-Whitney U test ($P < .05$).

educators. This lack of formal training in the area of teaching may contribute to the higher level of frustration reported by ATSs with regard to skill performance.[29] Preceptors must consistently be reminded of their roles as clinical educators and find ways for ATSs to regularly apply their knowledge and skills. Allowing ATSs to make quality decisions will empower and prepare them for their futures. Athletic training programs should continue to use preceptor training to help give feedback to preceptors on their ability to provide meaningful opportunities for ATSs. Regular use of formal assessments completed by ATSs and program administrators can provide valuable feedback for programs and preceptors to ensure that students are being instructed to apply the skills needed for their futures.

Frustrating clinical situations related to ATSs' abilities to recall and apply skills and information correctly were also reported to cause higher levels of frustration. This finding can be explained by the type of learning that occurs during the clinical setting. Learning that takes place during the clinical setting is often complex and requires students to use higher-order skills to properly perform their duties.[13] After completion of and concurrent with their didactic coursework, ATSs are instructed to use and perform many skills regularly in the clinical setting. Furthermore, the variability of exposures during a clinical experience may or may not require students to apply what they learned until months or years after it was taught. In nursing, researchers[3–6] have recognized that the application of skills is a common cause of negative emotional response among students. Investigators[3,5,6] have found that being uncertain about one's ability and clinical skills and having a fear of making mistakes were the most anxiety-producing situations. Preceptors can alleviate this frustration by creating a structured learning environment through scaffolding.[17] Scaffolding occurs when a preceptor controls parts of a situation through guided autonomy.[17] Strategies to achieve scaffolding

initially are to prepare students for their clinical interactions by discussing previous clinical experiences. This allows preceptors to gain a sense of students' skill levels. Preceptors can build on these interactions by performing mock practicals or questioning students through scenario-based examples, further enabling students to apply their skills and recall information in smaller elements. These techniques help build confidence and refine students' skill sets before working with individual athletes.

The demand of the clinical experience, specifically the ability of ATSs to balance clinical obligations with schoolwork, was perceived to cause a high level of frustration. As ATSs progress into the clinical experience, the preclinical structure (ie, solely attending class) is supplemented with clinical experiences. In addition to balancing their classes and clinical responsibilities, ATSs are expected to maintain their social identities as college students. Unlike other allied health care fields, the athletic training clinical setting can be less organized because of last-minute scheduling conflicts or weather-related cancellations or adjustments. All of these changes in ATSs' daily routines may contribute to their increased levels of frustration because of the multiple roles they maintain (students, ATSs, social beings). The ATPs need to recognize this frustration because researchers[30] have found that managing multiple roles can lead to burnout. The ATSs should understand the demands of the profession and have time outside of required clinical responsibilities. To do this effectively, ATPs should communicate with ATSs early about coping strategies, such as having appropriate social support outside of their ATPs and ensuring that ATSs take personal time by being involved in activities unrelated to athletic training.[30] One possible strategy is to have ATSs complete surveys on how they like to spend their free time, which may help them recognize activities to pursue outside the clinical and schoolwork responsibilities.

Sex and Frustration

As shown in Table 4, female ATSs reported higher levels of frustration than male ATSs in 13 of the 24 items. In 10 of the other 11 items, women reported higher levels of frustration than men but the differences were not significant.

Although determining the reason for gender differences is beyond the scope of this study, authors of previous research in this area have provided some ideas. Gender socialization research, specifically gender schema theory,[31] indicates that all behavioral and emotional differences between the sexes are due to learning influenced by differing socialization patterns. As children develop, they are introduced to stereotypical messages that may or may not be overt.[31] Given that some perceptions may be attributed to genetics, many are caused by the socialization of gender into their respective environments.[32]

The cultural environment of athletic training is rooted in organized sport. The language of sport continues to emphasize men's interests, and given this emphasis, researchers[33] have found that some women in athletic training have been stereotyped as being too demanding if they make decisions. Whereas the percentage of women has recently surpassed that of men in the National Athletic Trainers' Association certified membership,[34] athletic training has traditionally been a male-dominated profession, and men are still more often found in supervisory positions.[35] As indicated, students learn not only through interactions within themselves but also from others in their respective environments.[16] For this reason, preceptors should be more cognizant of the societal stereotypes about the cultural environment of sport and strive to make the clinical experience as unbiased as possible to professionally socialize ATSs during the clinical experience.[35,36]

Investigators[36] have demonstrated that differences exist between female and male students regarding the clinical experience and authority. Nicholson encouraged British medical school instructors to reflect on their attitudes toward sex "especially for female students who are frequently lacking appropriate role models."[36(p1057)] Wimer et al[37] highlighted the sex differences in learning activities of ATSs. They noted that women more often choose to be less assertive in mixed groups. Brady and Sherrod[38] lent support to the concept of professional socialization when they discussed the importance of opposite sexes being given tasks similar to those they will be expected to perform in the profession.

Throughout their lives, male and female ATSs have been placed in categories, given different tasks, or addressed in different ways based on their sex. Regardless of whether this is deliberate, these interactions have contributed to or reinforced gender stereotypes. Our results allow preceptors to become aware of clinical situations that lead to higher levels of frustration among the sexes. This knowledge can help ATSs be socialized appropriately into the profession and create a more conducive environment for learning in the clinical setting.

Limitations

We used a nonrandom, purposeful sample of ATSs in Pennsylvania. We chose them because of their proximity to the researchers. Despite this, the sex breakdown of the participants in our study reflected the breakdown of sexes from the 2005 to 2006 CAATE-accredited programs.[25] Generalizability of the results to other states or groups of students is limited. Our participants were instructed to submit self-report data. We assumed that participants were forthcoming and honest. A limitation is the extent to which these assumptions are true. The ATSFI was a valid and reliable instrument, but it intentionally measured frustration using a Likert scale that did not allow for neutral responses or responses aligning with not being frustrated; this is also a limitation of the study.

CONCLUSIONS

A student-perceived level of negative emotion during the clinical experience has been demonstrated in medicine and a variety of allied health professions but had not been evaluated in athletic training. Whereas certain levels of emotion are normal, educators need to know which situations cause higher levels of frustration because they can affect student learning. This study helped to establish a foundation for perceived levels of frustration during the clinical experience in ATSs. The findings indicated that ATSs have higher levels of frustration about how they are respected by various constituents, their performance and ability to remember skills and information, the opportunity

to apply skills daily, and the demand of the clinical obligation. The ATPs and preceptors should recognize these frustrations and discuss strategies to help mitigate their occurrence. Strategies such as building on students' previous experiences, progressively allowing guided autonomy during clinical educational opportunities, and designing professional socialization into the clinical setting could be implemented. Frustration cannot be eliminated, but by recognizing and discussing this emotion, ATPs and preceptors can help create a more conducive environment for learning and student success.

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