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## Factors of Stress, Burnout, and Frustrations Experienced by Athletic Training Students

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## Factors of Stress, Burnout, and Frustrations Experienced by Athletic Training Students

### Abstract

**Purpose:** College students are at a risk for increased levels of stress and burnout, and those enrolled in healthcare degree programs are more likely to experience higher levels due to balancing demanding roles. Our purpose was to assess sources of stress, burnout, and/or frustration in athletic training students (ATs) of different academic standings. **Methods:** Data were collected through the use of an original, 33-question questionnaire. An inductive approach was used to analyze the data and multiple analyst triangulation and interpretive member checks were used to secure credibility. **Results:** 27 male and female ATs from freshman, sophomore, junior, and senior classes from one institution voluntarily participated within this study. We were able to identify distinct themes of stress and burnout for each class of ATs. Freshman reported concern for the *time demand* from the major and a desire to have *more hands-on activity* involved with their clinical education experiences. The sophomores reported feeling stressed regarding the expectation to *retain information* and the *expectations to perform hands-on duties*, as well as their ability to *balance academic and clinical responsibilities*. *Challenging coursework*, *pressure during clinical experiences*, and *social conflicts* appeared as themes for the junior ATs. Finally, the seniors stated a fear of not achieving *professional proficiency* was a source of frustration. **Conclusions and Recommendations:** Based on our findings, efforts should be made to assist student time management practices, improve communication between preceptors and students, and make expectations of the athletic training program (ATP) faculty and preceptors clear. Such measures could help influence other positive changes within ATPs to improve the learning environment for ATs.



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**Purpose:** College students are at a risk for increased levels of stress and burnout, and those enrolled in healthcare degree programs are more likely to experience higher levels due to balancing demanding roles. Our purpose was to assess sources of stress, burnout, and/or frustration in athletic training students (ATs) of different academic standings. **Methods:** Data were collected through the use of an original, 33-question questionnaire. An inductive approach was used to analyze the data and multiple analyst triangulation and interpretive member checks were used to secure credibility. **Results:** 27 male and female ATs from freshman, sophomore, junior, and senior classes from one institution voluntarily participated within this study. We were able to identify distinct themes of stress and burnout for each class of ATs. Freshman reported concern for the *time demand* from the major and a desire to have *more hands-on activity* involved with their clinical education experiences. The sophomores reported feeling stressed regarding the expectation to *retain information* and the *expectations to perform hands-on duties*, as well as their ability to *balance academic and clinical responsibilities*. *Challenging coursework*, *pressure during clinical experiences*, and *social conflicts* appeared as themes for the junior ATs. Finally, the seniors stated a fear of not achieving *professional proficiency* was a source of frustration. **Conclusions and Recommendations:** Based on our findings, efforts should be made to assist student time management practices, improve communication between preceptors and students, and make expectations of the athletic training program (ATP) faculty and preceptors clear. Such measures could help influence other positive changes within ATPs to improve the learning environment for ATs.

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### INTRODUCTION

College students suffer from increased stress and psychological morbidity.<sup>1</sup> Culprits of this stress include basic responsibilities associated with college life, academic obligations and expectations, financial concerns, future life plans, and family/social issues.<sup>1,2</sup> Prolonged stress eventually leads to burnout, a condition often characterized by exhaustion emotionally and physically.<sup>3</sup> Burnout encompasses being overextended and exhausted by one's work (emotional exhaustion), feeling disconnected or void of emotion towards one's role (depersonalization), and reduction in feeling competent in one's work (personal accomplishment).<sup>3</sup> The condition of burnout has long been studied, since it was first described by Freudenberger,<sup>4</sup> and is often reported among college students.<sup>1,5</sup>

Students enrolled in medical or healthcare programs have been identified as at risk for experiencing burnout, mostly due to the time demands and expectations placed upon them to balance curricular expectations as well as patient care duties.<sup>6-10</sup> Burnout has been reported among medical students, nursing students, and physical therapy students, as well as athletic training students (ATs).<sup>6-11</sup> Athletic training is one of the fastest growing professions in the field of healthcare, and as a result, the demands for

higher quality and more competent athletic trainers has increased exponentially.<sup>12,13</sup> The expectations, therefore, have also risen and athletic training programs (ATPs) and faculty members expect and require more of their students, which can increase the risk for stress, frustration, and burnout. Motivation, persistence, and performance of athletic training duties are all elements of success within the major that are affected by students' ability to cope with these stressors.<sup>13</sup> If stressed enough, students' ability to integrate into an ATP can be effected, causing students to feel apathetic about their studies and increasing dropout rates from the ATP, continuing to further impact performance and retention rates of the profession.<sup>14</sup>

Athletic training students are active members within their college/university communities, and often report stress emanating from personal life, academic responsibilities, finances, and relationships.<sup>2,10</sup> Riter et al and Mazerolle and Pagnotta, in separate investigations, found that ATs do experience moderate levels of burnout, often from culminating responsibilities and constant juggling of roles related to student/college life, family, and clinical demands.<sup>10,11</sup> According to Stilger et al, students will gain more major-specific stressors, such as the long hours of traveling, consistently upholding a high academic standard, and dealing with non-compliant athletes and difficult coaching staffs on a daily basis as they become more integrated into the ATP.<sup>2</sup> Similarly, students can often become frustrated by many additional situations they encounter during clinical education including an inability to meet expectations during clinical education or monotonous clinical education experiences.<sup>15</sup> Recent graduates from undergraduate ATPs feel that the most prominent factors that contributed to frustrations occurred with time consumption, anxiety, feelings of being overwhelmed, time management, interactions with others, and clinical education.<sup>14</sup> Many of these factors are underlying causes or facilitators to burnout, with limited time being the primary enabler for stress and burnout for athletic training students.<sup>10</sup>

Perceptions of stress and burnout are fairly well understood in athletic training; however, scholars have rarely sought to investigate the similarities and differences among different academic levels within ATPs. Thus, the purpose of the current investigation was to assess sources of stress, burnout, and/or frustration in areas of academics, clinical education, social life, and motivation across the college careers of ATs. By researching and understanding factors of stress, frustration, and feelings of possible burnout within various classes of ATs, faculty and preceptors can use this information to enhance their respective ATPs with stress management and appropriate socialization techniques to help students succeed at each level.

## **METHODS**

In order to gain a better perspective on ATs' personal views on the ATP in which they are currently enrolled and components of stress, a qualitative questionnaire was utilized. Specifically, a qualitative case study design was utilized following a very exploratory design as discussed by Yin and Baxter and Jack.<sup>16,17</sup> The use of this design allowed us to gain a better understanding of the individual experiences of students enrolled in a small liberal arts setting related to stress, burnout, and frustrations. Selection of this school was purposeful, as a majority of Commission on Accreditation of Athletic Training Education (CAATE) accredited programs are housed in a comparable setting.<sup>18</sup> Secondly, our purpose hinged on gaining perspective from all levels of students ranging from freshman to senior year. Using one program allowed a more centralized focus, and all students included were bound to the same ATP guidelines, expectations, and experiences.<sup>16,17</sup>

## **Participants**

We asked sixty-one male and female ATs from one institution to volunteer to participate for this study. The pool of participants was comprised of 22 freshmen, 20 sophomores, 14 juniors, and five senior ATs who were 18 years of age or older. From this group, we were able to secure responses from 27 ATs. For a breakdown of respondent demographics, please see Table 1. We provided each participant with a pseudonym to protect his/her identity.

**Table 1. Response Breakdown by Class and Sex.**

Class Level	Total Responses (out of 27)	Age $\pm$ SD	Sex	Responses
Freshman	4	18.75 $\pm$ .5	Female	4
			Male	0
Sophomores	10	19 $\pm$ 0	Female	8
			Male	2
Juniors	9	20.33 $\pm$ .5	Female	9
			Male	0
Seniors	4	21.25 $\pm$ .5	Female	2
			Male	2

This study was distributed to a single, small, private, and religiously affiliated liberal-arts institution sponsoring NCAA division III athletics. The institutional enrollment is between 1000 and 3000 students with most students living on campus. We selected participants from an undergraduate ATP accredited by the CAATE with an enrollment of approximately 45 students (sophomore through senior years). This program allows students to participate in introductory level athletic training courses and 30 hours of clinical observation hours during the fall semester of their freshman year and apply for formal entrance into the program during the second semester of their freshman year.

The application process requires students to fill out an application, gather two letters of recommendation from credible references, and partake in an individual interview with the athletic training faculty and staff. Typically, approximately 75 freshmen are interested in applying to the ATP during the fall semester with about 20 applying for formal admission during the spring semester of their freshman year. Once in the program, students begin to take more athletic training specific classes, and clinical education becomes more time and skill intensive; sophomores are assigned mainly to local high schools and physical therapy clinics, and juniors are assigned mainly to on-campus intercollegiate teams. Senior students choose a clinical education site either on or off campus and an internship experience that may be completed over the summer or during one of the traditional semesters. In addition, students complete a general medical rotation. During their time at the host ATP, students will have rotated through 11 different clinical placements and gain a minimum of 830 total hours of clinical experience over their four years, 30 observation hours each semester during the freshman year, 100 hours each semester during the sophomore year, 150 hours each semester the junior year, a 40 hour general medical experience, and one semester of 150 hours during the senior year and one 80 hour internship.

### Procedures

This study used the QuestionPro™ online research website to create and distribute the questionnaire; response data was collected anonymously from participants. First, this study was approved by the host institution's Institutional Review Board before participant recruitment began. We sent an initial email to all freshmen, sophomore, junior, and senior ATs over the age of 18 within the ATP explaining the purpose of the study and asking for their participation. If a participant agreed to participate, s/he would click on a link within the email to access the QuestionPro™ website to complete the questionnaire. We gathered our data during the month of April, which may have contributed to feelings of increased stress, frustration, and burnout due to the proximity to midterms, as found previously.<sup>2</sup>

An athletic training educator completed a peer review of the questionnaire for content, clarity, and comprehensiveness. We finalized the question list after pilot testing the interview questions with two ATs and incorporating minor suggestions for clarity from both the peer and the students prior to initiation of recruitment. We did not include responses from the pilot tests in the final transcripts. Following the pilot testing, we moved ahead with recruitment and data collection. At the beginning of the questionnaire, we asked participants to answer background information questions. These questions included questions that clarified their sex and age. After completing the background information section, participants were asked to answer 25 open-ended questions. Please see Table 2 for example questions. We based the questions on previous research in athletic training, focusing on asking participants to identify and discuss sources of personal stress, burnout, and/or frustration in personal areas of academics, clinical education, and social life.<sup>2,10</sup> In addition, we asked participants to identify and discuss factors of their own personal motivation in athletic training.

**Table 2. Interview Question Examples**

What specific factors about the athletic training program appealed to you and helped inspire you to apply to the athletic training program at your respective institution?
Has academic stress ever hindered your ability to learn in the classroom? Has the level of stress made you feel overwhelmed? Have you ever felt burnt out and what does that sensation feel like to you? Explain.
Do you feel that your preceptors have been supportive of you and your clinical education? Why or why not? If not, what could your clinical preceptors do to better help you learn and cope with the stresses of your clinical experience?
Have there been situations in which you have had disagreements with a fellow classmate or a friend that have impacted your performance in the classroom or during clinical education? If so, please explain. What happened? Why did it happen?
Do you have any advice for someone in your position as an athletic training student in regards to managing their role and the expectations of the program?

**Data Analysis**

Assessment of the participants' response data was performed through an inductive approach of analysis.<sup>19</sup> In order to do this, we followed a precise procedure of closely reading responses, creating categories from common responses, and placing responses in one or multiple categories and subcategories.<sup>19</sup> First, the coding process began by printing out participants' responses and organizing them by class year. After separating responses by class, researchers read individual participant profiles and question responses, looking for and highlighting key words that summarized the entirety of the participant's response to a particular question. Maintaining the separation of classes, the researchers assembled key words for each question and summarized the main points within the categories of academic, clinical, and social stress to develop common themes among classes.

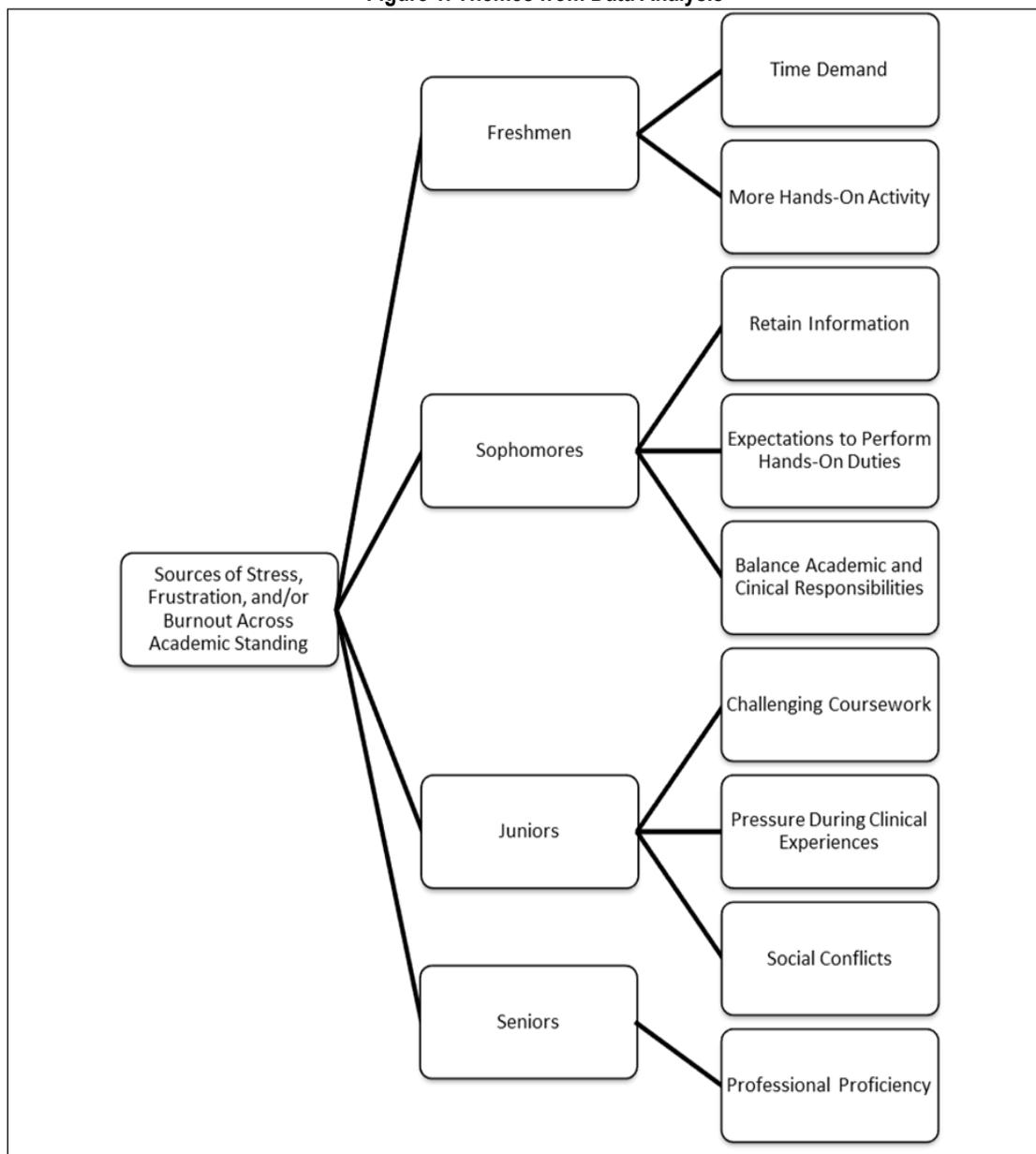
Through this approach, the researchers were able to condense the numerous complete responses from individual participants and distinguish commonalities and links between the research objectives and the findings found in the responses.<sup>19</sup> We were able to develop common responses, and in turn, develop theories about the structure of experiences had by ATS in the host ATP through these commonalities.<sup>19</sup>

Baxter and Jack suggest a case study design can be founded by rigor and credibility with careful planning, purposeful sampling, and systematic management of the data.<sup>17</sup> We were able to meet these suggestions by using a peer to review our methodology and interview guide, purposefully recruiting students, and by following specific steps when coding the data. We further maintained the trustworthiness of our findings by utilizing multiple analyst triangulation and an interpretive member check. The three authors independently coded the data and negotiated over the coding scheme and the presentation of the final results. The authors agreed on the themes, but slightly modified the language to use titles that best spoke to the data. Second, we performed member checks with four participants. We provided the participants with their transcript and our presentation of the results to verify accuracy. Thus, this study meets the criteria of rigorous qualitative research.

**RESULTS**

We were able to identify several themes from the data overall, mainly that burnout was occurring. In addition, we discovered distinct themes of stress, frustration, and burnout perceptions that could be attributed to each class of students (i.e., freshmen, sophomores, juniors, and seniors; see Table 1). The majority of stress factors were focused around didactic education, clinical education, and social life stress factors attributing to participants' motivations to remain in the major and future goals. The themes for each class are presented below with supporting quotes.

Figure 1. Themes from Data Analysis



### Freshmen

Within the freshman class, examples of burnout existed. One participant, Maria, described what happens when she becomes stressed:

I get very freaked out and then I know I need to take a step back and take a break to get everything in order and back on track; yes being burnt out made me feel as if I wasn't interested in the material anymore and there was nothing I or anyone else could do to make me interested. I felt very lazy and in a depressed kind of mood.

Similarly, Jade explained the effects of stress. She stated, "One time I was really overwhelmed with softball and my academics and I had a really bad headache and I missed the entire lesson because I was not focused."

**Table 3. Themes and Example Quotes from the Analysis**

Class	Theme	Example Quote
Freshman	Time Demand	"The workload sometimes, being able to remember a lot and I feel my life has been taken over by the Athletic Training program"
	More Hands-On Activity	"As freshman we cannot do anything but watch"
Sophomore	Retain Information	"The amount of material we are expected to learn is overwhelming"
	Expectations to Perform Hands on Duties	"It was hard for me to be able to jump right into being 'hands-on'"
	Balance Academic & Clinical Responsibilities	"All I am ever doing is work or athletic training or clinical hours"
Junior	Challenging Coursework	"The amount of classes taken in one semester, and the workload that comes with each class. It seems that every class is expected to be a top priority."
	Pressure During Clinical Experiences	"Yes, it is easy to feel inadequate and this increases my levels of stress. While it is a learning experience, it is easy to feel like you're failing when you're not familiar with a certain clinical practice."
	Social Conflicts	"One of my classmates is also a housemate of mine and an issue at home was brought to the clinic making me feel very uncomfortable in a classroom and clinical setting."
Senior	Professional Proficiency	"[I become] frustrated when trying to build confidence because I know that I know everything but it is still hard to apply everything that we have learned in the past four years"

From our freshmen participants, two main themes of stress emerged. First, the class perceived stress and frustration over the concern of the *time demand* from the major in relation to the possibility of future burnout. A female freshman participant, Victoria, when asked if she felt she had the ability to have a social life outside of the major answered, "Yes, but I heard that being an athletic training major is really stressful and that you will have no life once you hit sophomore year." When asked about the hindrance that academic stress had on her performance, Victoria defined the sensation as feeling "...like no matter what you do you can't do all of this work so you don't make an effort to do it and you're just tired and want to give up." Other freshman participants wrote about feeling the stress of the required time dedication within the major. When asked about the three most stressful factors in the clinical aspect of the host ATP, another female freshman participant, Jade, answered: "The workload sometimes, being able to remember a lot and I feel my life has been taken over by the athletic training program." She also commented on the difficulty of playing a varsity sport and completing the requirements of the ATP. She said one of the most stressful situations is, "getting clinical hours when playing a sport" insinuating the difficulty she has managing her time. A similar perspective was garnered from Maria. In response to what are the most stressful factors in the clinical aspect of her ATP, she responded, "Time, needing to get school work done, and all of the [clinical education] hours."

Another concern for freshmen students was a desire to have *more hands-on activity* involved with their clinical education experiences. When asked about enjoying clinical experiences within her respective program, Jane wrote: "Yes I have. But I wish to get more experience." At the same time, another female freshman participant, Jessie, said that she did not enjoy clinical education "because as freshmen, we cannot do anything but watch" and that clinical education "just takes up time," a factor that could also contribute to stress from trying to manage her time appropriately. One student, Victoria, did not even identify her time within the host ATP's clinic as experience, simply stating, "I have not had clinical experience yet."

The freshmen participants described situations of stress, frustration, and burnout. The majority of these feelings came from the perception of how hard it was to manage their time as they matriculate through the ATP once formal clinical education experiences begin. However, the students also wanted to experience more hands-on activity to help them feel more engaged in their learning.

### Sophomores

The sophomore group of participants described how the effects of stress, frustration and burnout have altered their ability to learn. The most extreme outcome was described by Kathy, who was seeking professional help. She said,

I'm actually currently struggling with minor depression, although no one knows except me and my counselor (at the health center). It feels as though nothing really matters, I lack motivation to take notes, do homework, and generally get things done. Unfortunately, this stresses me out even more because things aren't getting done on time or well. There are days I just want to stay in bed and cry, but that is not an option. So a brave face is put on and I struggle and eventually finish each day, exhausted but semi successful.

Martha also felt burnout during busy points that occur during the semester. She explained that academic stress, Has never hindered my ability to learn, but there is definitely the feeling of being over-whelmed. It is a lot of information and it all needs to be taken seriously. Sensation of being burnt out occurs after mid-terms, finals, or just a really stressful week. I am just mentally, and sometimes physically, exhausted and it is almost as if you forget how to speak. You are just so mellowed out from being so high-strung.

Finally, Mary stated,

[Stress from classes] has never really hindered my ability to learn, but it has definitely made me feel overwhelmed. Sometimes when I am so overwhelmed with stuff, I almost think to myself, can I really do this. I have felt burnt out and I feel like I just want to lay in bed and not do anything athletic training-related for a little bit.

The sophomores expressed three main themes of stress and frustration: the amount of required material to cover and the expectation to *retain information*, the transition from strict observation only clinical hours as freshmen to *expectations to perform hands on-duties*, as well as commuting to off-campus clinical sites and its effect on their ability to *balance academic and clinical responsibilities*. First, many sophomores stated that they felt the amount of required information sophomores are expected to learn is overwhelming, as 9 out of 10 participants listed the factor in their 3 major academic stressors. Paul stated the most stressful aspect of the classroom portion of his ATP is "The quantity of things we need to learn and know, the complexity and span of our knowledge, and knowing not all of the things we learn will be used again." Sally agreed stating she becomes stressed when "studying for tests [because] expectations are high and we are expected to know the information for life." Both Paul and Sally stressed the fact that merely memorizing information would not be sufficient as they would likely need to use some of the skills during their careers. Another female sophomore participant, Mary, stated that even time expected to learn the information is too short and adds to the perceived stress she feels

Just learning everything that goes along with the body and every injury. It is a lot of information and I feel like some of the professors expect us to know it overnight, and it gets very stressful when it's just so much information being thrown at you.

A similar response came from Kathy. She said she becomes stressed when she thinks about

Achieving what is expected of us. Our professors expect us to come into class prepared to learn and participate and set very high goals for us. They want us to do better than our best which is both a blessing and a curse at times.

Finally, one sophomore participant, Tonya, explicitly states that "the amount of material we are expected to learn is overwhelming."

A few sophomore participants mentioned problems with the abrupt transition in clinical experiences from strict observation as freshman to being expected to perform numerous hands on tasks. Tonya expressed her concern as a clinical hindrance:

As freshmen, we were not allowed to be hands-on with the athletes, but now at the high schools as sophomores we were expected to be hands-on. It is difficult to be able to jump right in and become more comfortable with the athletes to tape and evaluate them.

To Tonya, because "it was hard for her to be able to jump right into being 'hands-on,'" she states that her preceptor viewed her as "standoffish" and only after the preceptor corrected Tonya did it become easier to adjust to the situation. However, other sophomore participants expressed stress with not being able to perform much at the site because of their lack of knowledge in clinical abilities and attaining a newfound stress of not knowing what to do in situations that require clinical knowledge expertise. One female sophomore participant, Kimberly, listed two of her top three clinical stressors as "Not knowing the information" and "not getting to do much due to a lack of knowledge." Another female sophomore participant, Allyson, expressed concern about knowing what to do when an injury occurs and being thankful that she hasn't had to deal with acute injury. She stated, "...knowing what to do in emergency situations is always something that I think about, but, luckily, have never experienced." Finally, Steve stated he became frustrated from "not having learned everything and feeling somewhat incompetent at times, and sometimes being there for hours and not really doing anything."

Next, sophomore participants expressed problems balancing academic and clinical responsibilities, mainly due to clinical education hour requirements. A sophomore male participant, Adam, believes that balancing his class and clinical hours has resulted in a loss of time to relax, making scheduling "...almost a job." At times, the stress from clinical expectations involved the

commute to off-campus clinical sites, as participants expressed concern over the fact that their schedules were further complicated by the time spent traveling. Paula mentioned that “driving to the clinical site” was a major source of stress for her. Mary agreed stating,

Staying out late, and for me, the drive to and from clinical because, after you do clinical for about 5 or 6 hours, I do not want to drive 45 minutes to get home and then having to do homework and studying.”

Finally, in response to a question regarding the ability to have a social life, Mary states that she feels it is extremely difficult to have because “all I am ever doing is work or athletic training or clinical hours.” The demand of clinical hours and other workloads from additional general education classes can add onto the stress of the athletic training major.

In summary, the sophomores tended to struggle handling the expectation to retain large amounts of information covered during their learning experiences, the expectations to assist as a health care professional, and managing the various educational responsibilities. Processing new knowledge was the primary facilitator for increased stress, as they began to enter a more formal part of their educational training.

### Juniors

The junior class of respondents listed extensive reasons as to why they felt stressed, frustrated, and burnt out and how they were affected by these feelings. For example, Ruth explained that academic stress caused her to have dramatic physical and emotional changes: “I become highly emotional, mostly irritable and frustrated. I start getting frequent headaches and constant back pain. I also feel tightness in my chest.” Another female junior participant, Betty, replied that such stress has caused her a great deal of emotional anxiety that has led her to adapt bad habits: “My academic stress has caused me major anxiety issues, causing me to be on anxiety medicine. I found myself depressed, crying for no reason, having a lack of focus, and picking up unhealthy habits.” In particular, three reasons that affect individual student performance in academics, both didactic and clinical experiences stood out: *challenging coursework*, *pressure during clinical experiences*, and *social conflicts*. Although these themes seem similar to those found with the sophomore students, the symptoms and ramifications appear to be more extreme as the explanations noted above suggest.

First, many of the juniors stated they became stressed from the academic expectations and the class load. One student, Cecilia, summed up this theme by stating,

The three most stressful factors in the classroom would first be the demand of high quality of work. The professors demand high quality work, and therefore it is stressful to write a paper or learn things when you know the bar is set so high. The second factor would be the amount of work, each professor places a large amount of work on the students for each of their classes, and therefore it is stressful to get all of the work done to the highest quality. The last quality would be the timing. Most of my classes are set up in the same way with three tests and a final, therefore all of my tests and quizzes all tend to fall during the same week, increasing my stress.

When asked to describe the top 3 academic stressors, one female junior participant, Summer, summarized by stating,

The amount of classes taken in one semester, and the workload that comes with each class. It seems that every class is expected to be a top priority. The pressure to maintain a high grade point average. The lack of time to complete assignments, complete clinical hours, and study.

Similarly, Sophia stated the most stressful factors in the classroom portion of the ATP she is enrolled in are the

Academic standard – to constantly strive for the highest grade and feeling like a failure if it is below a B-. At times the course load – multiple things in multiple classes due the same day or all in the same week.

She goes on further to say that she often feels overwhelmed by this stress and it affects her motivation and positivity, as she feels that she is “...coming up short...” and that the outcome of her work is thereby affected.

Secondly, while the junior class explained the positives of clinical education, this class was unique in describing the pressure they felt from clinical preceptors to meet expectations as they began to work with collegiate level athletes. When explaining the top three clinical stressors, a junior participant, Joy, described the expectations of preceptors and how they affect her view of herself and her skill set:

The second stressful factor is the different expectations that your preceptors have of you. Some preceptors know you and have been exposed to your level and know you personally, but then I have had preceptors who don't actually know you that well, and have expectations for you that you do not expect them to have. Then when you fail to meet their expectations, it seems like you are incompetent, which frustrates both preceptors and students.

In addition, Joy goes on to explain her view of preceptors comparing students and the reaction it inspires within her:

A third stressful factor is that it feels like preceptors compare the students to each other. It feels like they see that one student can perform at one level, and then expect all the other students to perform the same way. This is extremely frustrating because we are not all the same person. We may be learning the same material, but we may not have the same experience or confidence level as other students. It also makes it frustrating because if we don't perform the same way as the other students, preceptors get frustrated at us, which I do not think is fair.

A similar sentiment came from Abby. When asked if the stress from clinical education expectations ever hindered her ability to learn, she said, "Yes, it is easy to feel inadequate and this increases my levels of stress. While it is a learning experience, it is easy to feel like you're failing when you're not familiar with a certain clinical practice." Sara questions her ability to function independently after graduation when she struggles with meeting patient care expectations. She said she becomes stressed when she

Draws a blank on something when being quizzed or creating a rehabilitation plan. I feel like I should know the answer, and so when I do not, I sometimes feel like I am not adequate for the major. Also, when things get hectic, I question that I will be able to perform as an athletic trainer on my own.

Junior participants also felt that because they share so many classes together, and many are in living situations with each other, the classmates often find that conflict has developed between them, and thus, their performance and interactions with others within the clinic is affected. Joy expressed how a living situation affected her performance academically:

Personal issues definitely affected how I performed in the classroom and [during] clinical [education]. A friend was not honest about a situation because she was scared and did not want to hurt any feelings, forcing me to leave our living situation, which affected me emotionally and academically.

Sandy, another junior participant, explains that her living situation also affected her relationship with another athletic training student and affected her comfort level within the clinic: "One of my classmates is also a housemate of mine, and an issue at home was brought to the clinic making me feel very uncomfortable in the classroom and clinical setting." Finally, one of the junior participants, Ruth, ended a romantic relationship, and it affected her performance in the classroom: "I broke up with my boyfriend and that made it hard to concentrate in class, which put me behind, which caused more stress."

Similar to the sophomore participants, the juniors struggled with difficult classes, the expectation to provide health care during clinical education, and tension among classmates. However, the examples and outcomes of these feelings appeared to be more severe among the juniors when compared to the sophomores. The stress and frustrations appeared to increase from the freshman and sophomore years, likely due to increased knowledge and the associated expectations that the juniors were ready to perform and handle more responsibilities.

### Seniors

Finally, the seniors also experienced stress and feelings of burnout. Judy stated,

I have recently felt burnt out and exhausted from course work as I have many times in the past. It is very overwhelming and does very much hinder attention skills within the classroom. It feels as if all you want to do is sleep, catch up on sleep, and just do absolutely nothing; sometimes, even your body aches.

The most extreme signs and symptoms of the effects of stress, frustration, and burnout were gathered from Tina. She described a situation from the fall semester of her senior year,

First semester senior year is when I had my first real panic attack. I was not getting any sleep and I was making myself physically ill. My vision was going, my acne was flaring up, I was vomiting non-stop, I couldn't stop crying, I was having a hard time breathing and finally had just had to tell myself, whatever happens, happens [with regards to my academic work]. I took a break for a day after that and my parents came up to see me that weekend and they reassured me everything was going to be okay. But that was the one time I ever had a true panic attack.

The senior respondents were found to have one major factor of stress -- a fear of not achieving *professional proficiency* prior to entering the work force, although some students also struggled with balancing academic, clinical, and personal responsibilities. Specifically, many senior participants were extremely concerned about their clinical application of academic knowledge. When asked about the top three stresses regarding clinical education, a female senior participant, Judy, responded, "Pressure to do right. I feel so much pressure from people watching that it stresses me out and I freak out." She went on to explain that she received, "Not enough constructive criticism: I feel I have not been given enough ways to make myself better, just [comments about] what I've done wrong." Tina identified one of her most stressful clinical aspects in regards to building confidence. She explained that she becomes frustrated when trying to "build confidence because I know that I know everything but it is still hard

to apply everything that we have learned in the past four years.” Heather mentioned that “there is a lot of information that we must learn and remember and fully understand which can be frustrating at times.” Similarly, Sean stated he is stressed by “trying to perform the best you can with the amount of knowledge that you have as you work your way through the program. [It’s] very difficult to do.” Lisa agreed stating, “Practicing skills in the clinic can be stressful if one is not 100% confident about the skills.” Finally, with regards to feeling overwhelmed or burnt out, Judy agreed that she has experienced those feelings. She described the feeling and how it affects her performance stating

Yes, it has hindered my attitude on multiple occasions. When I mess up during an evaluation, especially in front of a junior, I get really down on myself and I kind of beat myself up over the mistake I made so after that I am just in an irritated mood and you can't be in an irritated mood when working with athletes because you can't take it out on them.

Heather described being burnt out differently, but with a similar negative outcome. She explained,

Yes, it takes a lot of energy physically and mentally from a person when they are distracted by stress. I have felt burnout before. I would describe it as having no desire to go to clinical rotations and not wanting to perform athletic training duties.

Anticipation of their future role as an athletic trainer appeared to stimulate increased stress and feelings of burnout, mostly for a fear of incompetence.

The main source of stress, frustration, and burnout among the seniors dealt with the feeling of not being adequately prepared to enter the profession and provide health care autonomously. The pressures to be competent and error free seemed to stimulate increased levels of stress for the seniors. In addition, some others struggled with managing academic, clinical, and social obligations, as they felt the pressure to assume more responsibility and to manage their various responsibilities as they prepared to graduate.

## DISCUSSION

In order to meet the increasing need and demand for high quality and competent athletic trainers, accredited ATPs across the United States have had to adapt to higher national academic and clinical performance expectations and standards. By inducing selective admissions processes, standards, and other selective criteria, the academic quality of prospective and admitted students has risen. Students who maintained a high GPA through high school had higher college GPAs in ATPs and students who had higher high school and college GPAs found greater success on each of the 3 portions of the BOC exam.<sup>20,21</sup>

Thus, further adaptations have been made to student recruitment with program administrators making finding, recruiting, and retaining competent students into their programs a priority. Prospective students are expected to have the ability to integrate into an individual program's academic and clinical education demands, along with the added major-related stress that consequently accompanies these changes.<sup>12,13,22</sup> These new requirement changes have a high possibility of inducing high levels of stress that would affect a student's performance within the major and cause them feelings of overwhelming stress, frustration, and burnout. Therefore, the purpose of this research was to assess and discover sources of stress, frustration, and burnout of students from a CAATE accredited ATP located within a small, private liberal arts institution; areas investigated consisted of academics, clinical education, and social life of all four years of students. Perceptions and experiences of high levels of stress and periods of burnout have been reported within this population, previously.<sup>2,10,11</sup> Limitations, however, did exist including an examination of academic standing on perceptions of stress and burnout. Our findings overall expand our knowledge of stress and burnout and support previous research on facilitators to experiences of elevated stress among ATSS.<sup>2,10,11</sup> Our study specifically reveals that each individual class expressed both similar and unique factors of stress, frustration, and burnout. The findings from each class are discussed in the sections below.

### Freshmen

Within the freshman class, two main themes of stress emerged: concern with the *time demand* from academic and clinical experiences and the possibility of future burnout as well as the desire to *have more hands-on activity* involved with their clinical education experiences. Despite the fact that freshmen students in the current study only had to complete 30 observation hours in each semester during their freshman year, we believe they heard from peers in the classes above them that the hours get to be more stressful, likely contributing to some of the anxiety over time management in the future. It is concerning that they are feeling uneasy this early in the program as the hour requirements will increase as the students matriculate in the ATP. According to Herzog et al<sup>12</sup>, socialization variables, such as making friends within the program, have the largest impact on the rate of satisfaction with their respective programs; the students' relationships within the school helping improving retention rates.<sup>12</sup> When Victoria and Jade expressed their stress in dealing with their newly found dedication to studying and clinical hours, their stress levels were affected as they expressed the depression in relation to their stress levels and satisfaction with the program. Herzog et al suggests that ATPs should handle such social integration problems by focusing on the freshman year and

encouraging opportunities for freshmen to socialize with one another and have opportunities to meet and interact with upperclassman. Suggestions such as team building exercises, group work inside and outside of class, and a possible mentor/mentee system all have been shown as beneficial to the integration to the athletic training program and rate of success within it.<sup>23</sup> The host institution itself has taken steps to utilize such suggestions through individual introductory athletic training course assignments, learning community living arrangements, and a mentor/mentee system within the institution's student athletic training club. Perhaps it would be advantageous for the program to adapt a time-management class or lesson plan within introductory athletic training classes to help provide suggestions and help students identify better ways to manage and plot time to find and utilize free time for work or stress relief.

In regards to the frustration with the lack of hands-on freshman clinical experiences, Herzog et al found that freshman ATs found great dissatisfaction with their clinical education, it being the lowest mean satisfaction percentage of their view of the program.<sup>23</sup> It has been found that 59% of clinical education time was spent by freshman in an unengaged state, students saying their only involvement in clinical experience was monotonous and boring tasks, making them feel like "indentured servants" who were in the way of most clinical workers performing athletic training duties.<sup>24</sup> Despite the opinions of the freshman class, the CAATE regulates the amount of clinical exposure and skills a pre-professional athletic training student would be able to perform in the clinic; such regulations are put in place to protect the health and wellbeing of injured patients as well as health care providers. However, to better engage freshman, Herzog et al suggests preceptors involve freshmen as active observers in clinical conversations to help them learn and enjoy their clinical experience.<sup>23</sup> Perhaps clinical preceptors should be more open to interacting with athletic training pre-professional students during examinations, when prescribing therapeutic exercises, taping, or any other athletic training skills through quizzes, interactive discussion, and practice of palpation and other small tasks upon other ATs or staff. We believe active observation can lead to deeper socialization into an ATP as it allows pre-professional students to connect with preceptors, peers in the professional phase of the ATP, or faculty. Perhaps pre-professional students would find more enjoyment in the observation period even though they are not doing specific hands on activities if they are able to make personal connections and find mentors.

### **Sophomores**

The sophomore class expressed three main themes of stress and frustration: the expectation to *retain information*, the *expectations to perform hands on duties* instead of simply observing, and the ability to *balance academic and clinical responsibilities*. We were not surprised to find that sophomores struggle with the amount of information they are expected to learn and retain for subsequent classes. In the particular program studied, the sophomore year provides the foundational knowledge that is required for more advanced classes such as therapeutic modalities. Academics have been found as a major source of stress in studies previously; however, our study extends these findings by specifically identifying the requirement to retain information as stressful and frustrating for ATs.<sup>2,10,11</sup>

The sudden transition from the freshman no hands-on observation to a very hands-on and skill demanding off-campus clinical position provided a great deal of stress to the sophomore students in the host ATP. Interestingly, most of the sophomore students also listed active learning as what they liked most about their classroom and clinical experiences. They almost all also felt the learning environment was open and fun, yet the expectations stressed them out. We believe such abrupt changes can cause anxiety, potentially causing a decrease in retention halfway through the fall semester of sophomore year. Thus, it is vital that sophomore students receive proper clinical orientation through clinical socialization practices into their off-campus sites by their preceptors. By having an in-depth orientation to the clinical site, including sophomore responsibilities and discussions of student etiquette, students will better understand their place and responsibilities within the clinic. Also, by maintaining an open communication between students and their preceptors, any concerns can be expressed, and preceptors would be able to actively engage students within their comfort zone in daily practice and operations of the AT facility.<sup>12</sup> Furthermore, if a preceptor is able to openly communicate with sophomore students about their goals, strengths, and weaknesses, students would be able to build a trusting relationship with the preceptor that would lead to higher confidence, motivation, and further help progress the students and their comfort with their personal skills.<sup>12</sup> In addition, preceptors should have reasonable expectations for students based on their academic standing and their skill set, acknowledging the fact that it is likely not all sophomores will have identical skill sets. Aside from the off-campus clinical preceptor, Dodge et al recommend ATP administrators write clear mission statements and ATP goals to better explain their expectation of clinical experience to both students and clinical preceptors and review them consistently.<sup>25</sup> The ATP can also outline the specific skills and course outlines the program follows to off-campus clinical preceptors and hold meetings with any preceptors who have concerns, questions, or problems with ATs. However, based on our results, it appears to be a cultural shock to students regardless of how well faculty, preceptors, or peers prepare them for the challenges associated with completing an ATP.

The host ATP requires sophomore students to travel to off-campus clinical sites; these sites are located as close as 5 minutes from the institution to as far away as 45 minutes from the institution. Students, at times, considered the total daily and semester commute times to and from their sites as a stressor, taking away time to do academic coursework and extracurricular activities within the institution. According to Mazerolle and Pagnotta, these and other ATS time constraints often lead to role conflict that decreases a student's ability to fully meet the responsibilities associated with the role they have as an ATS.<sup>10</sup> Such responsibilities include balancing clinical and academic standards to maintaining the required academic grade point average and being able to fully understand and perform skills reflecting the information they have learned.<sup>10</sup> Therefore, it is important for students to actively try and discover time management skills, which could very well be formed within a time management segment in athletic training classes or from a required individual class that would discuss techniques to better manage the specific time demands of athletic training by the institution. However, Bowman and Dodge state that the ATP preceptors can also help reduce student stress by maintaining a flexible attitude with student's time commitments; perhaps students would benefit from weekly calendar scheduling of days off for sophomore students.<sup>12,14</sup>

### Juniors

Within the junior class, three main themes of stress emerged from data analysis: *challenging coursework*, *pressure during clinical experiences*, and *social conflicts* that affect individual student's performance in academics as well as the clinic. It seemed as though the junior year was when the amount of stress really started to culminate in burnout. It is interesting that this happened during the junior year and not the senior year. Riter et al found that the cumulative effect of stress can impact students as managing the many roles of an athletic training student can be burdensome and lead to burnout.<sup>11</sup> Perhaps the increased clinical education demands from sophomore to junior year (100 hours required during sophomore semesters compared to 150 hours required during junior semesters) along with the possibility that the senior participants in the current study found ways to manage the increased stress levels could explain the finding. Moreover, the senior students may have been able to see the "light at the end of the tunnel," which could also reduce their feelings of burnout. Clinical responsibilities, academic loads, and various other responsibilities set the foundation for increased stress. According to Stilger et al, academic concerns are one of the two greatest sources of stress for ATSS; this stress source often fluctuates along with and parallels the academic calendar (most stressful around midterms and finals, the months of October, November, and March).<sup>2</sup> The host ATP's course structure places the bulk of athletic training major courses during students' junior year; a common athletic training curriculum guide from the ATP suggests that students take no less than 17 credit hours during their fall semester and 16 credit hours during their spring semester. Students must maintain this academic rigor while completing 150 hours of clinical experience per semester. Like the sophomores, these high requirements also place role strain upon the junior class to the point where all participants reported feeling signs and symptoms of burnout. Following the suggestions of the prior classes, faculty and staff should encourage students to participate in time-management and study-skill seminars early during their college career or obtain individual assistance from on-campus professionals for their needs and urge students to continue their personal time stress coping techniques.<sup>2,10</sup> Most students did mention that faculty and staff are supportive; however, they still harbor feelings that professional counselors are likely better suited to discuss as several students had diagnosed cases of depression. Another possible way to help students develop time-management and study skills is by developing peer mentoring connections, which can also improve retention rates.<sup>12,13,26</sup>

One very unique stress factor juniors expressed was feeling a great deal of anxiety from the pressure placed on them to perform patient care during clinical education. As stated previously, many of the juniors felt that preceptors were too critical of their performance and could even hold favoritism for certain students depending on their perception of student performance. As figures who are viewed as role models of what is expected of an athletic trainer, athletic training professionals should learn to be effective listeners and sensitive to the concerns of ATSS and present themselves in a welcoming and open manner.<sup>2</sup> Many participants felt intimidated to approach preceptors about concerns due to feeling judged, disliked, or incompetent. ATP preceptors may wish to set up a number of one-on-one communication practices with the ATSS under their guidance to show encouragement and support, as participants explained how helpful the preceptors were once they were able to be approached about stress.<sup>14</sup> Open-door policies, showing genuine interest in the ATSS and their concerns, and making an effort to get to know them on an ethically appropriate personal level by asking questions that reflect their genuine concerns are all practices that will positively influence the students' understanding of expectations, help them feel more comfortable talking to their preceptors, and improve negative perceptions of their preceptors.<sup>2</sup>

Finally, the juniors expressed concern about the influence other students in the program had on their educational performance. According to Bowman and Dodge, people who ATSS interact with on a daily basis have the ability to fortify or diminish motivation to complete their degree.<sup>14</sup> Because the curriculum of the host ATP places the entire class of juniors in numerous major specific classes on a daily basis, these students may have the most impact on the student's motivation. Although the close relationships that often form between members of the same class help create support networks and assist in socialization, the close cohort

style of athletic training programs may be problematic and cause frustration in itself, such evidence supported by the participants expressing frustration with fellow ATS housemates and classmates causing stress among a few junior participants.<sup>12,14</sup> We are curious to know whether or not similar situations occur in other high stakes health care professional programs where competition can manifest. As suggested previously, it is extremely important for ATSs to find clubs, activities, and/or friends outside of athletic training to help cope with stress.<sup>14</sup> We also believe that faculty and preceptors need to value extracurricular activities as important and encourage students to become well-rounded and seek out such opportunities outside of athletic training. Work-life balance has become a central issue within the profession, and encouraging healthy practices to achieve this can help students promote professional enthusiasm, commitment, and increase the chance for career longevity.<sup>27,28</sup>

### Seniors

Within the senior class, respondents were found to have one major factor of stress, a fear of not achieving *professional proficiency* prior to entering the work force. As seniors prepare to enter professional practice, many reflect on the phases of professional socialization the program walked them through. These phases include initial admission into the program and evaluating necessary career requirements, learning the roles and responsibilities of athletic trainers and engaging in supervised experiences, and entering the workforce to receive on-the-job training in regards to the specific responsibilities with their position and the clinical environment at which they are placed.<sup>29</sup> As figures between the second and third stages of professional socialization, both the academic and clinical experiences are vital for ATS professional preparation to enter the workforce.<sup>29</sup> Thus, it is extremely important for ATP faculty and preceptors to create diversified clinical education experiences and support and mentor ATSs, factors by which senior ATSs are greatly influenced by when entering the workforce.<sup>29</sup> While most emphasis is placed on clinical experience, confidence is positively influenced by having a variety of experiences both in and out of the classroom; thus, ATP mentorship and the experience preceptors can provide are important means to gain self-confidence, skill proficiency, and advance clinical competence through reassurance of academic and clinical knowledge.<sup>29</sup> Therefore, as stated for junior participants, senior ATSs would benefit from scheduling numerous one-on-one meetings with their preceptors to discuss goals, problems, concerns, and praise.

### Limitations

Limitations of this study include the use of a qualitative case study design as the results of the current study may or may not be transferrable to other institutions. However, the purpose of a qualitative case study is to provide thick and rich description that allows the reader to formulate meaning and gain understanding of the context.<sup>30</sup> We also believe this is an important first step in determining sources of stress, frustration, and burnout among members of ATPs across academic standing. Future research should utilize multiple ATPs and also gather data at different times throughout the academic year instead of after midterms. The timing of our data collection may have contributed to feelings of increased stress, frustration, and burnout due to the proximity to midterms, as found previously.<sup>2</sup> We also had an uneven number of participants in each class (i.e., seniors, juniors, sophomores, and freshmen) and an uneven sex distribution which may have altered our results, especially as female ATSs have been shown to exhibit higher levels of stress than males.<sup>2</sup> Future research needs to continue to investigate the relationships between certain demographic variables and stress and burnout. Finally, it is possible that the feelings of stress, frustration, and burnout could have been a combination of multiple factors, some directly caused by the expectations of the ATP and some that may have occurred regardless of academic program.

### CONCLUSIONS

The purpose of this research was to assess sources of stress, frustration, and/or burnout in areas of academics, clinical education, social life, and motivation across the college careers of ATSs of different academic standing. The majority of stress factors were focused around didactic education, clinical education, and social life factors. Integrating time management recommendations, better communication skills, empathy from ATP preceptors, and clear expectations of the ATP faculty and preceptors can be used to enhance clinical experiences. Such measures would positively influence the experiences of current and future ATSs within the host ATP; such a model could help influence other positive changes within other ATPs and institutions across the nation to potentially help improve retention rates among ATSs, as it can allow for a reduction in stress as well as increased integration into the ATP.

## REFERENCES

1. Jacobs S, Dodd D. Student burnout as a function of personality, social support, and workload. *J Coll Student Dev.* 2003;44(3):291-303.
2. Stilger VG, Etzel EF, Lantz CD. Life-stress sources and symptoms of collegiate student athletic trainers over the course of an academic year. *J Athl Train.* 2001;36(4):401-7. [PMID 12937483]
3. Maslach C, Schaufeli WB, Leiter MP. Job burnout. *Annu Rev Psychol.* 2001;52:397-422. [PMID 11148311]
4. Freudenberger HJ. Staff burn-out. *J Soc Issues.* 1974;30(1):159-65.
5. Ross SE, Niebling BC, Heckert TM. Sources of stress among college students. *Coll Student J.* 1999;33:312-7.
6. Dyrbye LN, Thomas MR, Huntington JL, et al. Personal life events and medical student burnout: A multicenter study. *Acad Med.* 2006;81(4):374-84. [PMID 16565189]
7. Beck CT. Burnout in undergraduate nursing students. *Nurs Educ.* 1995;20(4):19-23.
8. Balogun JA, Pelligrini EA, Miller TM, Katz JS. Pattern of physical therapist students' burnout within an academic semester. *Phys Ther Educ.* 1999;13:12-7.
9. Donohoe E, Nawawi A, Wilker L, Schindler T, Jette DU. Factors associated with burnout of physical therapists in Massachusetts rehabilitation hospitals. *Phys Ther.* 1993;73(11):750-6;discussion 756-61. [PMID 8234456]
10. Mazerolle SM, Pagnotta KD. Perceptions of burnout from the student's perspective. *Athl Train Educ J.* 2011;6(2):60-8.
11. Riter TS, Kaiser DA, Hopkins JT, Pennington TR, Chamberlain R, Eggett D. Presence of burnout in undergraduate athletic training students at one western US university. *Athl Train Educ J.* 2008;2:57-66.
12. Bowman TG, Dodge TM. Factors of persistence among graduates of athletic training education programs. *J Athl Train.* 2011;46(6):665-71. [PMID 22488193]
13. Dodge TM, Mitchell MF, Mensch JM. Student retention in athletic training education programs. *J Athl Train.* 2009;44(2):197-207. [PMID 19295966]
14. Bowman TG, Dodge TM. Frustrations among graduates of athletic training education programs. *J Athl Train.* 2013;48(1):79-86. [PMID 23672328]
15. Heinerichs S, Curtis N, Gardiner-Shires A. Perceived levels of frustration during clinical situations in athletic training students. *J Athl Train.* 2014;49(1):68-74. [PMID 24143904]
16. Yin RK. *Case Study Research: Design and Methods.* 3rd ed. Thousand Oaks, CA: Sage; 2003.
17. Baxter P, Jack S. Qualitative case study methodology: Study design and implementation for novice researchers. *Qual Report.* 2008;13(4):544-59.
18. Bowman TG, Hertel J, Wathington HD. Programmatic factors associated with undergraduate athletic training student retention and attrition decisions. *Athl Train Educ J.* In press.
19. Thomas D. A general inductive approach for qualitative data analysis. *Amer J Eval.* 2006;27:237-46.
20. Platt LS, Turocy PS, McGlumphy BE. Preadmission criteria as predictors of academic success in entry-level athletic training and other allied health educational programs. *J Athl Train.* 2001;36(2):141-4. [PMID 12937454]
21. Middlemas DA, Manning JM, Gazzillo LM, Young JR. Predicting performance on the National Athletic Trainers' Association Board of Certification examination from grade point average and number of clinical hours. *J Athl Train.* 2001;36(2):136-40. [PMID 12937453]
22. Mensch J, Mitchell M. Choosing a career in athletic training: exploring the perceptions of potential recruits. *J Athl Train.* 2008;43(1):70-9. [PMID 18335016]
23. Herzog VW, Anderson D, Starkey C. Increasing freshman applications in the secondary admissions process. *Athl Train Educ J.* 2008;2:67-73.
24. Miller MG, Berry DC. An assessment of athletic training students' clinical-placement hours. *Journal of Athletic Training.* 2002;37(4 Suppl):S229-35. [PMID 12937550]
25. Dodge TM, Walker SE, Laursen RM. Promoting coherence in athletic training education programs. *Athl Train Educ J.* 2009;4:46-51.
26. Bradney DA, Bowman TG. Student perceptions of an athletic training residential living community. *Athl Train Educ J.* 2013;8(3):41-7.
27. Mazerolle SM, Ferraro EF, Eason CM, Goodman A. Factors and Strategies that Contribute to Work Life Balance of Female Athletic Trainers Employed in the NCAA Division I setting. *Athl Train Sports Health Care.* 2013;5(5):211-22.
28. Mazerolle SM, Goodman A, Pitney WA. Factors influencing the retention of male athletic trainers in the NCAA Division I setting. *Inter J Athl Ther Train.* 2013;18(5):6-9.
29. Mazerolle SM, Benes SS. Factors influencing senior athletic training students preparedness to enter the workforce. *Athl Train Educ J.* 2014;9(1):5-11..
30. Hesse-Biber SN, Leavy P. *The practice of qualitative research.* 2nd ed. Thousand Oaks, CA: Sage; 2011.