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ORIGINAL RESEARCH

Athletic Training Students' Preparation and Perception of Resources Available to Them Following a Critical Incident

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Context: Although catastrophic injuries are rare, athletic trainers must be ready for emergencies. It is unknown how athletic training students (ATSs) are prepared for postcritical incident management.

Objective: To explore the perceived availability and helpfulness of resources available to ATSs after critical incidents.

Design: Qualitative.

Setting: Individual interviews.

Patients or Other Participants: Eleven current ATSs and/or recent graduates (5 women, 4 men, and 2 prefer to not share; age = 24 ± 4 years) who experienced a critical incident during clinical education.

Data Collection and Analysis: We used criterion sampling for recruiting participants in multiple modes until data saturation was achieved. Participants completed demographic surveys and participated in semistructured interviews regarding their involvement, resources available after the incident, and perceived helpfulness of the resources. All transcripts were deidentified and coded by a 3-person team following the consensual qualitative research tradition. Member checking, triangulation, external auditing, and peer discussion among researchers established credibility and trustworthiness for the analysis.

Results: Three domains emerged: *strategies acquired before the incident*, *management during the incident*, and *postincident regulation* of a review of the resources that had been available. In *strategies acquired before the incident*, participants described that program preparation, previous personal/clinical experiences, and self-regulating mental health strategies all assisted in managing emotions after the incident. During the incident and the time immediately after, participants discussed managing emotions with formal debriefing, sound policies and procedures, and communication with athletic training faculty and peers. After the incident, some noted that they had an abundance of resources available to them during the critical incident, whereas others noted feeling isolated.

Conclusions: ATSs have resources available to them and an awareness of the impact critical incidents have on mental well-being. They relied on convenient coping mechanisms (eg, peers, preceptors, or faculty debrief) rather than formal counseling. Athletic training programs should provide students with resources and support before and after incidents.

Key Words: clinical education, mental health, emergency care, emotion

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KEY POINTS

- Athletic training students sought the support of other athletic training students and athletic training faculty following a critical incident.
- Professional mental health services should be considered following a critical incident rather than only peer-to-peer debriefs.
- Debriefing should focus on not only the critical review of the care provided but also the emotional wellness of the health care providers within a critical incident.

Athletic trainers spend much of their time on minor acute injuries and illnesses.[1] Limb and life-threatening injuries are inherent to the sports and activities in which athletic trainers' patients participate but are less commonly managed on a routine basis.[1] As such, athletic trainers and athletic training students (ATSs) could experience a critical incident in their daily practice or clinical education at any time.[2–5] Critical incidents are defined as any event outside of the norm of human experience[6] that evokes extreme emotional states.[3,7] Critical incidents typically involve a perceived threat to one's physical integrity or the physical integrity of someone else and are determined by how they undermine a person's sense of safety, security, and competency in the world.[2,6] Although the definition of a critical incident remains the same, each person's interpretation of what constitutes a critical incident may vary based on how they process and interpret the situation.

The timing of when critical incidents occur is unpredictable, and athletic trainers must be prepared to intervene at any time. Clinicians must have the skills and knowledge to not only properly care for their patients but also cope following the experience.[8] Previous research has identified that a lack of care for the provider following a critical incident could result in chronic symptomatic distress if never properly resolved.[9] Athletic trainers have self-identified as thinking too much and experiencing anxiety and other mental health-related consequences after involvement with a critical incident.[10,11] To cope, athletic trainers have indicated that they seek help from mental health professionals and untrained personnel, debrief, and use integrative mental health strategies.[10,11] However, it is unknown how ATSs experience and manage critical incidents. Therefore, the purpose of this study was to explore the perceived availability and helpfulness of resources available to ATSs following a critical incident during clinical education.

METHODS

Research Design

This study followed a qualitative approach to explore ATSs who have self-identified as experiencing a critical incident as part of their clinical education. To complete the study, we used the consensual qualitative research approach with semistructured interviews and followed the Consolidated Criteria for Reporting Qualitative Research checklist, which is designed to ensure that qualitative research studies are high quality and follow appropriate rigor.[12] We used the following definition of a critical incident: any event outside the usual realm of human experience that is markedly distressing; however, each individual was able to interpret what met the criteria for them as an individual. Before the initiation of the investigation, we obtained approval from the Temple University Institutional Review Board.

Participants

Participants were included if they were a current ATS enrolled in or a recent graduate (within 6 months) of a Commission on Accreditation on Athletic Training Education-accredited master's in athletic training program. Participants also self-identified as having experienced a critical incident and were excluded if they attended or graduated from the home institution or did not meet the inclusion criteria. Twelve individuals started the interview process, but 1 interview was ended as the individual disclosed that they had not experienced a critical incident. In total, 11 participants (age = 24 ± 4 years; 5 women, 4 men, and 2 prefer to not share) who had completed the survey in its entirety and completed the interview were included within this study (Table 1). The participants were given pseudonyms to maintain confidentiality. Interviews ranged from 15 to 30 minutes in length (interview average = 19 ± 8 minutes). After the 11 interviews, the interviewer had determined that saturation was met, as she was hearing reoccurring themes without any new information being added by participants. Among these participants, 10 of 11 were currently enrolled in athletic training education programs, while 1 of 11 was a recent graduate (ie, 2 months). Three of 11 participants maintained previous medical training or certification.

Instrumentation

Preinterview Survey. First, participants provided consent and then answered 7 questions using an electronic survey to assess demographic characteristics and provide information about critical event history (ie, the number experienced and type) and resource availability. This survey was conducted using Qualtrics (Qualtrics Inc, Provo, UT), a confidential, web-based program. The initial survey was created by 3 members of the research team (J.A.W., E.R.N., J.L.M.) based on current literature. The survey underwent 3 rounds of revisions between all 3 members of the team before being sent for external validation. To complete the survey, it was sent to other members of the research team (Z.K.W., L.E.E.) who have expertise in the field of qualitative research, mental health, and emergency care. A final draft of the survey was completed when the entire research team came to a consensus regarding the questions following 2 more rounds of revisions.

Interview Protocol. We developed a semistructured interview protocol.[13,14] The current study's interview protocol consisted of 8 questions in conjunction with a variety of follow-up

Table 1. Participant Information

Participant	Gender Identity	Age, y	Previous Credentials	Current Status in Professional Program (By Semester)[a]
Madi	Woman	23	N/A	2/6
Raven	Woman	22	Lifeguard	11/12
Luna	Woman	23	N/A	2/6
Kyle	Man	24	N/A	3/4
Finn	Man	Prefer to not answer	CSCS	5/6
Alie	Woman	24	N/A	Graduated
Jasper	Man	22	N/A	3/6
Anya	Woman	23	N/A	3/5
Lexa	Woman	Prefer to not answer	N/A	3/6
Abigail	Woman	23	N/A	6/6
Bellamy	Man	35	EMT, Military Medical Training	5/5

Abbreviations: CSCS, Certified Strength and Condition Specialist; EMT, Emergency Medical Technician; N/A, not available.

[a] Participants were asked about their current semester at the time of the interview out of the total number of semesters in their athletic training education program (current semester/total semesters).

questions based on participant answers. All questions were focused on the topic of the critical incident for which the participant provided care and the resources that were or were not available to them (Table 2). The interview protocol was developed by 2 members of the research team (J.A.W., E.R.N.) based on gaps in the current literature and aligned with the aims of the project before being sent to the remaining 3 members (J.L.M., Z.K.W., L.E.E.) for review and consensus. The interviewer for this study identifies as a woman and is a certified and licensed athletic trainer.

Procedures

Recruitment for this study used a variety of methods, including athletic training program administration emails, the National Athletic Trainers' Association (NATA) survey database, and social media. Initially, the research team compiled a publicly available distribution list of administration (ie, program directors and clinical education coordinators) email addresses of all athletic training programs listed for accredited professional master's programs on the Commission on Accreditation on Athletic Training Education website. A total of 241 athletic training programs fit the inclusion criteria at the time of initial data collection (July 2021) and were contacted through emails. Within the email, the program administrator was given information for the study and was asked to share the recruitment email and link to the survey to ATSs who had been involved in at least 1 clinical education rotation or had recently graduated within the past 6 months. A follow-up request was sent to all programs. Concurrently, potential participants were recruited through social media platforms such as Twitter and Facebook. The primary investigator and research team posted from their accounts and in social media groups to which they had subscribed. Finally, the NATA survey distribution sent out 1000 emails to randomized NATA student members, asking for participation if they fit the description. These emails were sent in October 2021, with reminder emails every 2 weeks over the course of 9 weeks.

Table 2. Interview Protocol

1. Please describe the events of the critical incident that you were involved with as an athletic training student.
   a. If they don't talk about it—What was your involvement in providing care during the critical incident?
2. Why did this event constitute as a critical incident for you?
3. What preparation, if any, do you believe your athletic training program provided you prior to the critical incident you were involved in?
   a. How did they deliver this preparation?
   b. Do you have any specified trainings for managing critical incidents?
4. In your survey, you identified {insert resources} were used to cope with the incident, please explain why you chose to use these resources?
   a. In what ways, if any, were these resources helpful to you?
   b. For how long following the critical incident did you use the resources available to you? Please explain.
5. In your survey, you identified {insert resources} were not used to cope with the incident, please explain why you chose not to use these resources?
6. Please describe any additional resources that may have benefited you in coping with this situation.
7. Do you have anything else that you would like to add to this interview?

Potential participants began the research by completing the informed consent within the initial survey. After agreeing to the informed consent, participants were asked to confirm if they have self-identified as having been part of a critical incident as an ATS. Participants were asked for demographic information along with their interest in being contacted for the follow-up interview. Quantitative data collected by the survey were analyzed using central tendencies (ie, mean, median, and mode) as necessary. Within the survey, participants were asked to provide their email address if they were interested in completing an approximately 30-minute interview regarding their critical incident experience. Participants who fit the inclusion criteria, had self-declared that they had experienced a critical incident, and provided this information were then sent an email requesting to participate in an interview. All of the qualitative data within this study were obtained during the semistructured interview.

Those who were interested were sent a scheduling email from the primary investigator. Once scheduled, another email containing the link to the online interview was sent, and the interview

Table 3. Resource Availability and Use (n = 11)

Resources	Participant Responses (n, %)			
	Available and Used	Available But Not Used	Not Available and Would Use	Not Available and Would Not Use
ATs Care	3, 27.3%	4, 36.4%	2, 18.2%	2, 18.2%
Bereavement support services	0, 0%	7, 63.6%	1, 9.1%	3, 27.3%
Contact with clinical education coordinator	7, 63.6%	4, 36.4%	0, 0%	0, 0%
Contact with current preceptor	3, 27.3%	8, 72.7%	0, 0%	0, 0%
Contact with other athletic training faculty	5, 45.5%	5, 45.5%	0, 0%	1, 9.1%
Contact with other preceptors	5, 45.5%	6, 54.5%	0, 0%	0, 0%
Contact with program director	5, 45.5%	6, 54.5%	0, 0%	0, 0%
Counseling after incident	1, 9.1%	8, 72.7%	0, 0%	2, 18.2%
Counseling before incident[a]	0, 0%	8, 80.0%	0, 0%	2, 20.0%
Debriefing	9, 81.8%	2, 18.2%	0, 0%	0, 0%
Exercise	5, 45.5%	5, 45.5%	1, 9.1%	0, 0%
Meditation	3, 27.3%	7, 63.6%	0, 0%	1, 9.1%
Mindful eating	5, 45.5%	5, 45.5%	1, 9.1%	0, 0%
Mindfulness	4, 36.4%	6, 54.5%	1, 9.1%	0, 0%
Peer support (athletic training students)	10, 90.9%	1, 9.1%	0, 0%	0, 0%
Peer support (other)	6, 54.5%	4, 36.4%	0, 0%	1, 9.1%
Spirituality	3, 27.3%	6, 54.5%	2, 18.2%	0, 0%
University provided resources	0, 0%	10, 90.9%	0, 0%	1, 9.1%

[a] One participant did not provide a response for this resource. Percentages were calculated out of 10 responses.

took place at the scheduled date and time. Participants engaged in the semistructured interview protocol. All interviews were conducted audio only with only the interviewer and the participant present and were transcribed through Zoom (Zoom Video Communications, San Jose, CA). Before beginning the interviews, the interviewer pilot tested the script as well as interview techniques with 2 participants who met the inclusion of the study, but their data were not included in the final data analysis for this project.

Data Analysis

Transcripts and interview audio files were uploaded directly to the primary investigator's cloud for deidentification and cleaning, including the removal of all identifiable information of the participant (eg, name, age, school, and clinical placement) from the transcripts. Following deidentification, the transcript files were sent back to the participant for review and shared with other research team members using an online file-sharing service. Participants had 15 days to review their transcript and make any changes or additions; no participants indicated the need for changes. All qualitative data analysis for this study occurred through 3 phases following the consensual qualitative research method of data analysis as outlined by Hill.[13–15]

During phase I, the data analysis team, made up of the primary investigator and 2 additional investigators, reviewed 3 transcripts independently and then met as a group to identify core ideas. Domains and categories were developed through consensus to create the preliminary codebook. In phase II of the process, the team used 2 transcripts from phase I and 2 new transcripts and applied the preliminary codebook, making adjustments to the codebook where necessary. In the final phase, each member of the data analysis team coded a portion of the transcripts using the consensus codebook, and each transcript was internally audited by 1 other member of the team. Any disagreements were discussed until a consensus was reached.

Following the completion of coding, all transcripts and the consensus codebook were reviewed by an auditor outside of the data analysis team to verify the consensus codebook and representativeness of the data.[13–15] The use of internal and external auditing, along with member checking and multianalyst triangulation in coding, established trustworthiness.

RESULTS

Following a critical incident, ATSs primarily used support of other peer ATSs (n = 10, 90.9%), debriefing (n = 10, 90.9%), other peers (n = 9, 81.8%), and the clinical education coordinator for their athletic training program (n = 7, 63.6%; Table 3). Most participants (n = 8, 72.7%) reported that counseling services after the incident and contact with their current preceptor were both made available but not used.

Three domains emerged from the qualitative data: (1) *strategies acquired before the incident*, (2) *management during the incident*, and (3) *postincident regulation*. The Figure depicts the final codebook with the domains and categories. Table 4 details the frequency for the coded data per category. Categories were considered general if they were found in 10 to 11 transcripts, typical if they were found in 6 to 9 transcripts, and variant if they were found in 2 to 5 transcripts.[16]

Strategies Acquired Before the Incident

The domain entitled *strategies acquired before the incident* was defined by having or lacking any coping mechanism before the ATS experiencing the critical event. These strategies varied across the interviews, including having personally experienced a previous critical incident, prior work training, and/or a generic coping mechanism (eg, exercise or religion). Three categories emerged from the data: *self-regulated strategies*, *programmatic preparation*, and *previous experience*. These were all strategies participants

Table 4. Frequency Count of Codebook

Domain	Categories	Frequency	Frequency Count[a]
Strategies acquired before incident	Self-regulated strategies	Typical	9 of 11
	Programmatic preparation	General	10 of 11
	Previous experience	General	10 of 11
Management during incident	Procedures and clinical role	General	10 of 11
	Athletic trainer leadership and peer support	General	10 of 11
	Formal debrief	Variant	5 of 11
Postincident regulation	Perception of resource availability	Typical	9 of 11

[a] Categories were considered general if they were found in 10 to 11 transcripts, typical if they were found in 6 to 9 transcripts, and variant if they were found in 2 to 5 transcripts.

possessed before the incident and were leveraged during the critical incidents.

Self-Regulated Strategies. *Self-regulated strategies* (appearing in 9 of 11 transcripts) were coping mechanisms that participants brought into their critical incident already used to address life stressors. Within this category, participants introduced concepts, such as exercise, healthy eating, self-regulation strategies of meditation and mindfulness, and religion, as means to cope with the critical incident that they had experienced. Madi discussed how her religion helped her peace of mind for a situation where she lost a patient as well as her decision to become an athletic trainer:

> *I am a spiritual person. I am a Christian. I've been a Christian my whole life, so being able to lean on my spiritual beliefs and knowing that that athlete was going to be protected, whether it was how I wanted her to be or not brought me peace and it also brought me peace knowing, you know, this is what I was called to do. I was called to help people in situations like this, and it almost solidified my decision and getting into the [athletic training] program.*

Bellamy shared how the gym provided him with a much need outlet:

> *For the past 16 years, I've woken up in the morning. The first thing I do is go to the gym. It's just my way of destressing but, it's also my happy place, so it just helps me mentally. If I'm in a bad mood, or if I'm depressed, or down, or whatever way by the end of my gym session I'm usually not feeling that way.*

Abigail described how the practice of journaling helped her self-reflect on her clinical care:

> *Mindfulness I use when I get home and do a reflection, like short diary entries, because sometimes, writing everything out and making it real helps me process it because there's times when I'm like "did that just happen?" But once I write it down, I can gather my thoughts, a little bit and acknowledge them. And then it also lets me see what I did, is there anywhere I could have improved?*

Programmatic Preparation. Participants were able to translate skills they had learned in their didactic education to the critical incident they were experiencing as part of the *programmatic preparation* (appearing in 10 of 11 transcripts). The participants talked about the fact that their athletic training programs did mock scenarios or simulations that they felt prepared them for critical incidents during their clinical education. Not all participants felt prepared, as some talked about a lack of preparedness for the emotional toll the critical incident could take on them. Anya discusses the rigorous training she received with her program:

> *Our preparation is amazing. I did not feel like I could have had anything taught differently or taught better. Our [athletic training] program does an amazing job in preparing us from the minute we start summer classes going into our first semester of how to deal with critical situations. We are constantly doing drills in our clinical [education] classes. We walk in and our Clinical [Education] Coordinator will be on the ground, and we will have to respond to that situation, whatever the situation may be.*

Although many participants feel as though their program prepared them well to provide physical care during a critical event, Alie shared how the emotional impact of being involved in these scenarios was left undiscussed by her program:

> *I don't necessarily think they gave us much guidance emotionally going in, if that makes sense. We kind of are given the "this is what you do in this situation" talk. So, we had kind of the step-by-step actions to take, but I guess we weren't necessarily prepared on how to react once we were actually in that situation. I definitely think that we could have had a little bit more instruction on that for sure.*

Kyle spoke specifically about how simulations benefitted him:

> *Over the summer we will go to a facility in our state, and we do live simulations, so they'll simulate stadium noise, like thousands of fans, and they'll give us an exertional rhabdomyolysis case or a cervical spine incident where we'll have to activate EMS and provide care until they arrive and then load them into the gurney and once, they are into the vehicle that is when the simulation would end.*

Madi shared how repetition allowed her to go through the critical incident with confidence:

> *For a while, I thought it was a little repetitive how much we are going over it, but I never second guessed if I was doing it correctly (during the critical incident), I didn't question myself or my preceptor, so I was prepared very well for that situation and how to handle it.*

Previous Experience. A commonality seen across the interviews was that participants' prior experience (appearing in 10 of 11 transcripts) helped them to act in the critical incident. This

category was further divided into previous personal experience and previous clinical experience. Participants talked about how their personal and professional past experiences were able to shape their perceptions of the critical incident. Additionally, some participants had previous life experiences that they related to the critical incident at their clinical site to help them cope with the current event. Raven spoke to the effects that having an idea of what was to come could help maintain emotions throughout the incident.

> *I think it [prior critical incident experience] just helped me stay calm in a situation and not freak out personally. Because if I would have freaked out, then it would have just made the athlete freak out and mom freak out, and it would have just been a mess.*

Alie shared that previous life events outside of her clinical education made her feel more prepared to handle the more difficult situations that being an athletic trainer can come with:

> *I know personally that I have been through a lot myself outside of the [athletic training] program and I do believe that I deal with situations in a way that most other people don't. I don't necessarily bottle things up, but I do kind of think myself through situations and realize that I have this mindset that everything happens for a reason, and there's a reason that I saw what I did and a reason it was me and maybe not somebody else. Because I know that I could process things a little bit easier, without it necessarily weighing on me as much.*

Not all participants came into their critical event with previous life experience to guide them through. Lexa discussed how clinical simulations differed from the real-life events, "and from practicing with my classmates. It definitely did not go as smoothly in real life."

Management During the Incident

Management during the incident was defined as any form of care that took place during or immediately following the critical incident. Three categories emerged as relevant to this domain: *procedures and clinical role*, *athletic training leadership and peer support*, and *formal debrief*.

Procedures and Clinical Role. *Procedures and clinical role* (appearing in 10 of 11 transcripts) were the steps taken by the ATS to provide care during the critical incident. Participants noted this care the day of the incident and the day immediately following. The participants noted using various aspects of their skillset, including immediate and emergent care techniques, while also recognizing and referring for mental health conditions. Jasper recounts how he was able to provide rehabilitation and mental health care for a patient:

> *My portion of helping him was trying to make sure he was there for his team and had the motivation for basketball but also, to make sure that he stayed healthy, that he was still on track to return to play, making sure that he didn't feel left out, I guess, I was there more for his psychological health, and we did core workouts together things like that to prepare him for the surgery, so he didn't feel so out of shape. Because he was talking to me about like the last time he had this injury, he had it he gained 20 pounds because he did nothing, and so I tried to intervene and make sure we take this with the right approach, make sure we handle it all mentally and psychologically and still stay physically healthy because there's things that he could still do.*

Sometimes the ATSs described equipment malfunctioning during the critical incident. Bellamy explained during his situation where equipment malfunctioned occurred:

> *We had a cardiac event, and the athlete was beating at over 200 beats a minute, their perfusion was garbage, and we didn't have the best equipment to double check our vital signs, so that was probably the most frustrating thing. We couldn't verify and make ourselves feel better by trying to get a really good diagnosis on them, and that was a scary feeling not having a true diagnosis of what was going on, because we didn't have an EKG and our pulse ox wasn't working. We did have a blood pressure cuff, which was good. But taking a manual heart rate on somebody who's over 200 (beats per minute) is next to impossible.*

While some participants provided care for an athlete following a season-altering orthopedic injury, other participants aided in the care of the patient's mental health. Luna described how the death of a patient not only impacted the team but also her and her preceptor:

> *We were trying to keep the peace, but also, because we knew him it was kind of hard, but we were trying to keep ourselves collected and be there for the coaching staff if they needed anything. We were there to help them keep their heads up and try to give them the resources that they needed, while also trying to give myself and the other AT staff with the resources that we needed to be functional and be able to support one another.*

Abigail mentioned how she and her preceptor collected themselves and continued with their day following a critical event:

> *So then afterwards, even though she ended up being okay, I remember, we had to go back to basketball, which I kind of just wanted to go home at this point. But because there was only me and the certified, we took a deep breath and it was like, okay, let's go back to basketball.*

Athletic Training Leadership and Peer Support. *Athletic training leadership and peer support* (appearing in 10 of 11 transcripts) was one of the most used resources by our participants immediately following a critical incident. Athletic training leadership was defined as preceptors and athletic training program faculty or staff, whereas peer support encompassed other ATSs or peers outside of the program. Participants often mentioned that this was one of the most helpful methods. Another commonly used resource was in the form of class discussions. Participants would share what took place, allowing for a validation of emotions by classmates and professors. Many participants expressed concern with feeling validated in the clinical skills performed during the critical incident. Another form of using this resource was outside of the classroom, when peers or professors would reach out to students following a critical incident for a more private conversation.

One commonly used method of using this resource was in the form of class discussions. Kyle stated,

If we were in our rehab class and you had a critical incident, we would just bounce ideas off a professor. Obviously, you can read something in a book or a position statement but in the field, it's going to be different and case by case with the patient. Each patient is going to present differently so bouncing off ideas each other and saying okay this person is presenting with X, Y, and Z what would you have done in that situation?

Preceptors were another commonly resourced person for conversations following a critical incident. Abigail described her communications following a critical incident:

That (the preceptor) was pretty much it. Had it not been for my preceptor I'm pretty sure I would have probably broken down a little bit worse. So, I'm super grateful that they were there to talk to me.

Another form of using this resource was outside of the classroom, when peers or professors would reach out to students following a critical event allowing for a more private or comfortable conversation for the student. Finn recounted,

The head of the (athletic training) program was reaching out when she would suspect things. You can just tell with people's work and their appearance when they are suffering. We are too tough to say things and feel bad for my partner after I left apparently. The old preceptor started taking things out on him, but he never mentioned anything. Not everyone would share with our program and our program would have been more than happy to help them. Our program director, like the individuals, our professors, and our preceptors would have been more than happy to connect us with whoever we needed, and we try and be there for us personally.

Anya reported a similar feeling in communicating with her peers following the critical incident:

I also talked to my athletic training classmates about (the event) and voiced my thoughts and opinions and what I felt I could have done differently, and they validated my response to (the critical event).

Formal Debrief. *Formal debrief* occurred in most of the critical incidents reported (appearing in 9 of 11 transcripts). These participants talked about the value of having a specific time where they talked with their preceptors or other stakeholders regarding the situation, their performance in the situation, and their emotional state following the experience. Raven mentions her experience with debriefing after the incident:

We sat down for about 20 minutes, and we debriefed on the whole situation: what we thought went well, what we thought could have been improved, and how we were both doing after that, which I think was really helpful. Because it was a whole new experience and having to go out into the field as a certified athletic trainer later down the line, I feel like that really helped calm my nerves to experience that and to talk through it with someone.

Abigail recounted advice she received during her debrief with her preceptor:

I remember sitting at this game and I kind of felt emotionally overwhelmed and I started crying and my preceptor said "Hey, let's go outside. Let's debrief." And he was talking to me, and he asked me, "Why are you upset?" and I told him I felt like I was helpless like I could have done more, and he said, "we're always going to think that after the fact, because there's always a million different ways to handle situations."

Postincident Regulation

The domain of *postincident regulation* included a real-time perspective of the resources available to them at the critical incident. Participants described why they chose or did not choose to use specific resources, along with the timeframe they used these resources. The category coming from this domain spoke to the participant's *perception of resource availability*.

Perception of Resource Availability. Participants reported that they feared that the information they shared with their stakeholders may not be private or may reflect negatively on them. Other participants noted that they were too busy to be able to go to counseling or use other resources because of their schedules and available time. One point of interest made by Abigail was the fear that the information shared may not be private or may reflect negatively on them:

Specifically with ATs Care the reason I didn't use them is because I had heard about it, but I didn't know if they would understand. I know it's certified athletic trainers who are still practicing but I felt they wouldn't understand where I'm coming from as much versus like my peers. Because I'm still a student and what if someone who is a part of ATs Care that I talk to ends up judging me for what I did or it somehow gets back to my professors because that's usually, one of my biggest worries that they're going to be like Oh, didn't do this correctly! We taught you differently, even though I know that's not what's going to happen there's still that fear.

Kyle discussed how an ATS's schedule, much like that of a practicing athletic trainer, is very busy. Between classes, homework, clinical, and managing basic human needs, ATSs do not have the time they need to use the full plethora of resources available to them.

My schedule is a little too busy for going to a therapy session so, in that aspect, I'm a little more strapped for time. I don't have time to sit down for 30 minutes for a therapy session.

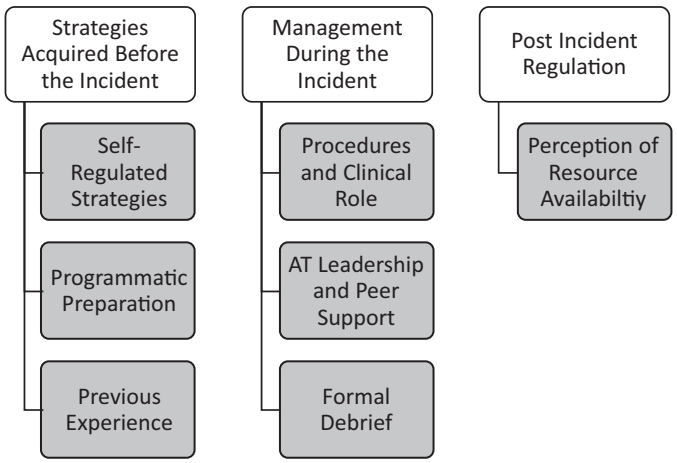
DISCUSSION

ATSs use multiple methods to prepare for and manage critical incidents. Critical incidents are shaped around an event that has an emotional impact, which overwhelms the traditional coping skills of a health care provider and therefore causes psychological stress.[17] It is important to remember that these do not have to be extreme events but rather based on the characterization of the individual health care provider. Our findings identified 3 domains, with between 1 and 3 categories in each domain (Figure).

Strategies Acquired Before the Incident

In this study, learners discussed various methods of coping during a critical incident by drawing from previous educational or life experiences. This preparation was viewed as sufficient for some participants in our study. Unfortunately, others do not believe that their academic preparation was adequate in learning how

Figure. Completed codebook.



to manage the critical incident they faced. Some coping methods acquired before the incident include self-care and religious/spiritual beliefs. Regular self-care strategies, especially following a critical incident, can allow one to be more self-aware and positively affect the well-being of the health care provider.[17] Religion and spirituality instill hope in the form of rituals, such as prayer, song/dance, and community events.[18] We recommend that health care providers explore the role of religion/spirituality in their life and how it can help them to manage and cope through the grief response.

Athletic training educators should seek out methods within the student's academic preparation to allow for practice in safe environments. Participants indicated that simulated patients, where learners immerse themselves in high-fidelity scenarios including the emotional response to the situation,[19] were beneficial preparatory educational experiences. The use of simulation in athletic training education is not novel as it has been documented in mental health,[20] cardiopulmonary resuccitation,[19] equipment removal,[21] and exertional heat illness.[22] One limitation of clinical education is that despite the most strategically planned rotations, ATSs may have limited direct involvement with some aspects of patient care.[23] Participants noted that the first time experiencing an emergency as a health care student was hard, but if they could build on previous experiences, including those offered through simulation, they perceived that they were better equipped to provide care. Educators should use simulation to both prepare learners for what is to come during their clinical education and fill in gaps within the clinical education experience to allow learners a safe environment to first experience clinical emergencies.

Participants who had experienced prior critical incidents did feel better prepared. This phenomenon is similar to that seen in survivors of the Boston marathon bombing, as cited by Garfin et al.[24] Survivors who had experienced traumas early in life, before the Boston Marathon bombing, were less likely to have post-traumatic symptoms than those who had not. However, students may not be willing to share past life events, and some individuals may have repressed memories, which could surface following involvement in a critical incident.[25] We suggest that psychological safety practices be included as part of clinical education orientation to provide an opportunity and space for the ATS to explore their previous experiences. It is imperative that educators and preceptors stay vigilant to changes that the ATS may demonstrate following the critical incident.

Management During the Incident

Participants noted various needs during the critical incident, including the ability to debrief following the situation. Debriefing positively impacts psychological outcomes.[3,26] Although 9 participants mentioned the use of a formal debrief in the survey, only 5 considered this a valuable aspect in the interview, only 3 described contact with a current preceptor, and the others did not state who facilitated the formal debrief. It was more common for the ATS to seek out a previous preceptor than their current preceptor. Preceptors need to be cognizant of the emotional responses that ATSs may experience in clinical education experiences. A majority, 62%, of emergency department nurses stated that they were never given the opportunity to debrief following a critical incident yet felt that they needed it.[3] The student may need to talk, but the preceptor may not realize that the student is interpreting the situation as a critical incident and may miss an opportunity to debrief with students.[27] Additionally, the preceptor involved in the critical incident may also be experiencing emotions and may not be capable of working through them with the student. Therefore, communication from the preceptor to the athletic training program administrators is necessary following a critical incident even if the student has not reported it directly.

When a critical incident occurs, debriefing should occur as a hot and/or cold debrief.[28] Critical incident debriefing, which is an important component of critical incident stress management (CISM), is not long-term counseling and is not always completed by someone with a mental health degree. This is an acute-phase debriefing, which is important, but must be followed up by long-term counseling for some people. Hot debriefs occur immediately following the event when emotions are high, blocking full clarity to process the details of the results and at a time where the health care providers may be emotionally vulnerable.[29] Although hot debriefs are the most frequently occurring form of debrief, research is scant regarding the effectiveness.[29] Research suggests that cold debriefs, ones that happen after some time has passed (eg, 1 to 2 weeks), should also be incorporated. In cold debriefs, feedback should involve the use of objective performance data, such as video recordings of the care provided.[29] The need for cold debriefs aligns with the needs expressed by athletic trainers in previous research on critical incidents, where participants discussed wanting to focus on the steps of care given during a critical incident.[11]

The participants in our study often sought the help of those within the athletic training community following a critical incident. Despite the fact that 10 of the 11 participants in our study noted peer support as a valued part of their coping strategies, previous literature contradicts the notion that health care students benefitted positively from peer support following a critical incident.[30–33] Additionally, over half of the participants in our study sought the help of athletic training faculty or preceptors immediately following a critical incident, which could be compared with previous research where participants said that they preferred to debrief with a trusted colleague or coworker following the critical incident.[11] This is also concurrent with those in emergency medical services who sought out supervisory support immediately following a critical incident.[17] Because of this, it is vital that athletic training programs prepare preceptors and faculty members for

appropriate debriefing and resource referral strategies. Although caring and empathy are critical factors for health care providers and educators alike, we recommend that faculty and preceptors be aware that ATSs are not patients, and we need to ensure appropriate referral for counseling services.

Postincident Regulation

Preventative measures should be taken in a way that makes employees and supervisors aware of the impacts of critical incidents and creates an environment for people to acknowledge and seek support when needed.[34] Health care providers in critical incidents may experience what is termed second victim syndrome, specifically for those who know the patients well, like most athletic trainers. The term "second victim" was initially termed for health care providers who had made a medical mistake and therefore had the emotional repercussions of the situation for the "first victim," the patient involved, and the "second victim," the health care provider.[35] Currently, this term is applicable for any time a health care provider feels emotional stress following patient care without any link to the care (whether appropriate or not) to the patient.[36] Proper management of second victim syndrome must be from a trained mental health provider.[37] Despite this knowledge, the majority of participants in our study did not seek long-term care from counseling (available but not used = 8, 72.7%; not available and would not use = 2, 18.2%) or resources provided by the University (available but not used = 10/11, 90.9%; not available and would not use = 1/11 9.1%) for management following a critical incident. This lack of formal support following a critical incident has been found to lead to post-traumatic stress disorder,[6] professional burnout,[38] and decreased academic performance.[39]

Following times of major critical incidents, such as the performance of cardiopulmonary resuscitation by an athletic trainer, it may be evident that there is a need to debrief. However, not all cases are as outwardly visible to others. Sometimes others may not know that the ATS was triggered by the incident (ie, an incident where the student said that they were okay at first but later were not) or private incidents, such as those who have experienced sexual misconduct. It is imperative that ATSs, faculty, and preceptors are trained in the recognition and referral of mental health concerns. Stress following a critical incident can manifest, if left untreated, into other conditions, such as anxiety and depression. One method that could help in the recognition of these signs and symptoms is Mental Health First Aid in which the information, typically prepared for patients, can be transferred to their peers and colleagues in referral to counseling services.

Another option to seeking care following a critical incident is through CISM, which is a form of crisis intervention. The CISM process was originally designed for emergency medical personnel to mitigate the acute psychological distress that can come from a critical incident.[6] CISM is built off of 7 main principles: (1) precrisis preparation, (2) disaster or large-scale incident, (3) defusing, (4) critical incident stress debriefing, (5) one-on-one crisis intervention or counseling, (6) family crisis intervention, and (7) follow-up and referral mechanisms.[40] Within athletic training specifically, ATs Care was created in 2014 as a profession-specific CISM response.[41] ATs Care is a peer-to-peer debriefing program that allows athletic trainers who are trained in immediate crisis management to talk to someone about navigating the emotions and return to work following a critical incident. Around half of the participants in the current study knew of ATs Care and used the services, while half of the participants who did not know that they had access to ATs Care would have used the services. Although programs like ATs Care have the potential to be beneficial for a person going through critical incidents, this is not a substitute for long-term counseling services. ATs Care is developed for immediate, short-term, peer-to-peer interventions following a critical incident.

Limitations and Future Research

This study was not without limitations. The impact of adverse childhood events and the management of critical incidents were not within the scope of this study, and we are unaware if any participant had these previous experiences. In addition, we did not collect social factors that may have contributed to their lived experiences, such as their geographic location or institutional characteristics. Future research should explore the preparation of ATSs in understanding critical incidents and the resources available to them before the incident. Moreover, additional research is necessary to identify the resource availability and the quality of the resources for CISM in athletic training job settings.

CONCLUSIONS

Our study aimed to examine the resources available to ATSs and their perception of those resources following a critical incident. Overall, the resources that the students perceived they needed were available to them during and following a critical incident. The participants should consider the use of professional mental health resources following a critical incident to ensure that they are coping in a safe manner. This study can be used by athletic training programs across the country to understand that there is a large array of incidents that ATSs are viewing as critical to them. It is important for athletic training programs to prepare their students with resources that they can use throughout their time in the profession to healthily cope and prepare for future critical incidents as clinicians.

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