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Access to Care, Reporting Behaviors, and Quality of Athletic Training Service Interactions for Reserve Officers' Training Corps cadets

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Purpose: Reserve Officers' Training Corps (ROTC) programs prepare student-civilians to become leaders through strenuous physical and leadership training. Unlike their student-athlete counterparts who have direct access to athletic training services, ROTC cadets may or may not have healthcare provider available. The purpose of this study was to examine the access to care and reporting behaviors of ROTC cadets with a secondary aim exploring the quality of healthcare service interactions relative to patient-centered care. **Methods:** An online survey assessed access to care using a self-report tool on the type of medical providers available to the ROTC cadets (n= 132, age= 20±3y) dispersed between the Army, Navy, Air Force, and Marines, and their illness/injury history and reporting behaviors. The participants who sought care by the healthcare provider with follow-up analysis using the Consultation Care Measure tool for all athletic training service interactions. Data were analyzed using descriptive statistics. **Results:** ROTC cadets reported access to 2±1 healthcare providers including a designated civilian physician (26.5%), athletic trainer (23.5%), and ROTC peer first responder (14.4%). However, 50% of respondents stated they were unsure what healthcare providers were available. In total, 22.7% of cadets reported being injured and 26.5% reported being sick/ill while participating in ROTC activities. Of those who stated they had sustained an injury during ROTC, 59.9% seldomly or never reported their injury. The ROTC cadets who sought healthcare expressed they were satisfied with their injury (35.96±10.60) and illness (35.48±13.10) treatment from a patient-centered viewpoint. **Conclusions:** The ROTC cadets reported a general unfamiliarity with the healthcare providers available to them. Despite the reporting behaviors, the cadets reported being satisfied with the care they received. **Key Words:** *tactical athletes, emerging practice, patient-centered care.*

INTRODUCTION

Based on the occupational setting classification within the National Athletic Trainers' Association (NATA) membership, most athletic trainers (ATs) practice in either the clinical (28.1%), college/university (24.4%), and secondary school (17.8%) job settings.¹ An underserved job setting for ATs is the military population.² As of January 2020, there are 427 ATs whom serve the members of the military with the majority (70%) accounted for between the US Army and Air Force. Previous research in 2013 identified that there were only 27 full-time ATs within the military organization at several basic training bases.² There are ongoing efforts by the US Department of Defense to create more medical facilities and clinical personnel to

better assist and reduce the inconsistencies of healthcare services.³ Prior to these efforts, healthcare access for military members incorporated physical therapists, physicians, physician assistants, nurse practitioners, and nurses throughout basic training and active duty housed under the military health system. The military health system determines where patients can be seen, what they can be seen for, and who they can be seen by.³ The contractual relationship has created a tension between one's health while seeking treatment and reporting illnesses with one's status in the military and potential future earnings. Research in other tactical athletes, or individuals in service professions (e.g., firefighters and construction workers) who have physical and mental fitness

requirements associated with their work often while wearing additional gear or uniforms,⁴ has identified the likelihood to report injury and illness is decreased due to pain being considered part of the job, stigma surrounding reporting injuries, and overall inability to find appropriate aid.^{5,6}

Previous research indicates that during basic training, military recruits have some of the highest injury rates, specifically for stress fractures, due to the workload demands.⁷ However, the evidence for musculoskeletal injury reporting behaviors by US Army soldiers indicates that 49% of individuals who self-reported that they were injured did not report their case to the healthcare provider on the base.⁸ The infrequent reporting behaviors by soldiers are directly linked to fear and stigma that is expressed through the attitudes of the leadership and self-perceived fear of impact on their career by being classified as “profile” which places restrictions on training.^{8,9} A recent study detailed that while injury rates are relatively similar, female trainees are more likely to report their injuries compared to the male trainee counterparts.⁹

When considering the military, many members enlist directly out of high school for basic training, but others seek to enter the military as a commissioned officer. To be eligible, typically the individual must complete a four-year degree while participating in the Reserve Officers’ Training Corps (ROTC) at their respective college or university.¹⁰ In 2019, only 10.96% of all active component commissioned officers in the Department of Defense had less than a 4-year college degree, and 27.9% of all active-duty officers were graduates from and ROTC program (45.9% of newly commissioned active-duty U.S. Army officers, 1.8% of U.S. Marine Corps officers (through NROTC), % of U.S. Navy officers and 19.7% of U.S. Air Force officers).¹¹ In 2020, there were 1,000

colleges and universities with an ROTC program, which is designed to train and develop future military leaders.¹² The ROTC is the largest commissioning body and produces roughly 60% of the second lieutenants that join the US Army and more than 40% of current active duty general officers.^{10,13,14} Therefore, the vast majority of ROTC cadets desire to continue their military career upon graduation.¹⁰ The main objective of the ROTC is leadership development which is achieved through leadership behavioral assessments.¹² However, a commissioned officer must take part in the routine physical demands of the military which is achieved by ROTC programs incorporating extensive physical exercise and routine fitness assessments relative to mental, physical, and cognitive training that integrates teamwork and communication training.¹³ As expected, the physical demands through the program are vast and contribute to training-related injuries.¹³

College and university ROTC programs are designed to prepare civilians to become future leaders. Paired with the stress of being a full-time college student, their demands of physical and leadership training as a ROTC cadet places this group at high risk for injury and illness. If the model developed by the US Army stands true, we would expect to identify that ROTC cadets undergoing advanced leadership training may display poor reporting behaviors relative to injury/illness similar to their commissioned officer counterparts. However, access to care for ROTC cadets has not been studied meaning there is limited injury surveillance data available with even fewer reports of the experience for ROTC cadets when they sought care for an injury/illness. Therefore, the purpose of this project was threefold: 1) to explore ROTC cadets’ access to healthcare providers; 2) to examine the injury reporting behaviors for cadets; and 3) to understand cadets’ perceptions of care from a patient-centered care perspective.

METHODS

The study was deemed exempt by the XXX Institutional Review Board prior to the onset of data collection. College/university students currently enrolled in a ROTC program from all 50 states and US territories (including District of Columbia, Guam, Northern Mariana Islands, and Puerto Rico) were recruited to complete the cross-sectional survey. Participants were required to be participating in ROTC activities as part of one of the three branches including Army, Navy (which includes the Marines), and Air Force.

Procedures

The research team utilized a web-based survey platform (Qualtrics, Inc., Provo, UT) to construct the multi-part survey exploring the access and experience with healthcare providers for ROTC cadets. To recruit the participants, the research team sent e-mails to a contact person for the academic unit at the institution where the ROTC program was housed. This method was used to avoid undue influence from their cadre leaders and military personnel. The academic unit's contact person was asked to forward the e-mail containing the link to the survey to the ROTC cadets in all branches at their college/university. The e-mail also reiterated the study was not meant for their academic faculty, the contact person, and/or any currently commissioned member of the military including the ROTC leaders. The survey link was sent to 541 email addresses on September 15, 2020, and remained open until October 13, 2020, with a total of four reminder e-mails sent to the contact person weekly during that period. The survey remained open for an additional week after the last reminder e-mail was sent. Interested participants who opened the survey link were presented with an online invitation to participate and entered the study. Due to the snowball sampling method deployed for recruitment, a true access and response rate for the survey were difficult to calculate. The study began by collecting demographic

information relative to the individual including their age, gender identity, military branch, year in the ROTC program, student classification, and type of higher education institution they were enrolled in.

Access to Care

The level of access to healthcare in the ROTC programs was measured using a tool created by the research team. The tool was developed in consultation with healthcare providers for ROTC cadets and previous literature on access to care options to establish content validity. The tool explored the type of medical providers available to the ROTC cadet for ROTC activities. If the ROTC cadet reported that they did not have access or were unsure of whom was available, they were presented with an open-ended response asking them to describe what they do if they become sick or injured during an ROTC activity. To aid the participant, definitions of sick/ill and injured were provided.¹⁴ An injury was defined as *"any physical complaint that you sustained which resulted from a ROTC activity, irrespective of the need for medical attention or time loss from activity"* and sick/ill was defined as *"being affected by a physical or mental illness; not in full health; not functioning at your normal level; suffering from an illness or disease."*

Injury Reporting Behaviors

Following the access to care questions, participants were asked if they had been injured and/or ill while participating in their ROTC program. If they selected yes, the participant answered how many injuries and/or illnesses they had sustained and if they chose to report them. If they did report, the participants were asked how often they reported injuries and/or illnesses using a 5-point Likert scale (1=almost always, 2=often, 3=sometimes, 4=seldom, 5=never) and who they reported the injuries and/or illnesses to, as well as the medical provider that evaluated them for their condition. If the participant chose "no" to reporting the injury and/or

illness, the participant was prompted with an open-ended response to describe why they chose to not report.

Patient-Centered Care Evaluations

For the purpose of this study, the Consultation and Relational Empathy (CARE) tool was utilized to measure the level of patient-centered care provided by a healthcare provider when the ROTC student was injured or ill during an ROTC activity. The participants, regardless of access to care, were presented with one tool specific to their perceptions of patient-centered care. To do so, the reliable CARE tool was used to measure the patient’s view of holistic care and provider empathy.^{15,16} The CARE tool uses 10 questions (Table 1) each rated using a 5-point Likert scale (1=poor to 5=excellent) with the combined scoring ranging from 10 (lowest) to 50 (highest).¹⁵ The CARE tool has high internal consistency (Cronbach alpha = 0.97) and moderate inter-rater reliability.¹⁵ Based on those results, the CARE tool was determined to be a valid tool and can be used to reliably assess the patient’s view of care and empathy.^{15,17}

Participants were asked to rank (1=not important, 4=very important) the following statements on the level of importance to you when you consider an experience with a healthcare provider for an injury or illness sustained during an ROTC activity. If they had not been injured or ill, they ranked on their perceived importance for a future experience.
1. Making you feel at ease
2. Letting you tell your story
3. Really listening
4. Being interested in you as a whole person
5. Fully understanding your concerns
6. Being caring and compassionate
7. Being positive
8. Explaining things clearly
9. Helping you take control
10. Deciding on a treatment plan with you

Table 1. The CARE Tool

At the end of the survey, participants that had selected that they were seen or have access to an athletic trainer were further prompted to

answer an abbreviated version of the Consultation Care Measure (CCM) tool. The CCM tool is a reliable tool ($\alpha = 0.84 - 0.96$) that uses a 4-point Likert scale (4=very strongly agree, 3=strongly agree, 2=agree, 1=neutral/disagree).¹⁶ The CCM tool (Table 2) is a 21-item assessment that asked the participant how well the athletic trainer used patient-centered care tactics for the ROTC cadet. The research team utilized the first 11 questions of the CCM tool as only 5 participants completed the final 10 items of the tool.

<i>Prompt: Please respond to the following questions. The athletic trainer...</i>
• Was interested in my worries about the problem
• Was interested when I talked about my symptoms
• Was interested in what I wanted to know
• Encouraged me to ask questions
• Was careful to explain the plan of treatment
• Was sympathetic
• Was interested in what I thought the problem was
• Discussed and agreed together what the problem was
• Was interested in what I wanted done
• Was interested in what treatment I wanted
• Discussed and reached agreement with me on the plan of treatment

Table 2. The CCM Tool- abbreviated 11 questions used for analysis

The CARE tool uses the score to group satisfaction of the participant with 10-20 = very dissatisfied, 21-30 = dissatisfied, 31-40 = satisfied, and 41-50 = very satisfied with care.^{18,19} Figure 1 provides a comprehensive flow chart of the recruitment and instrumentation process of the survey experience for the participant.

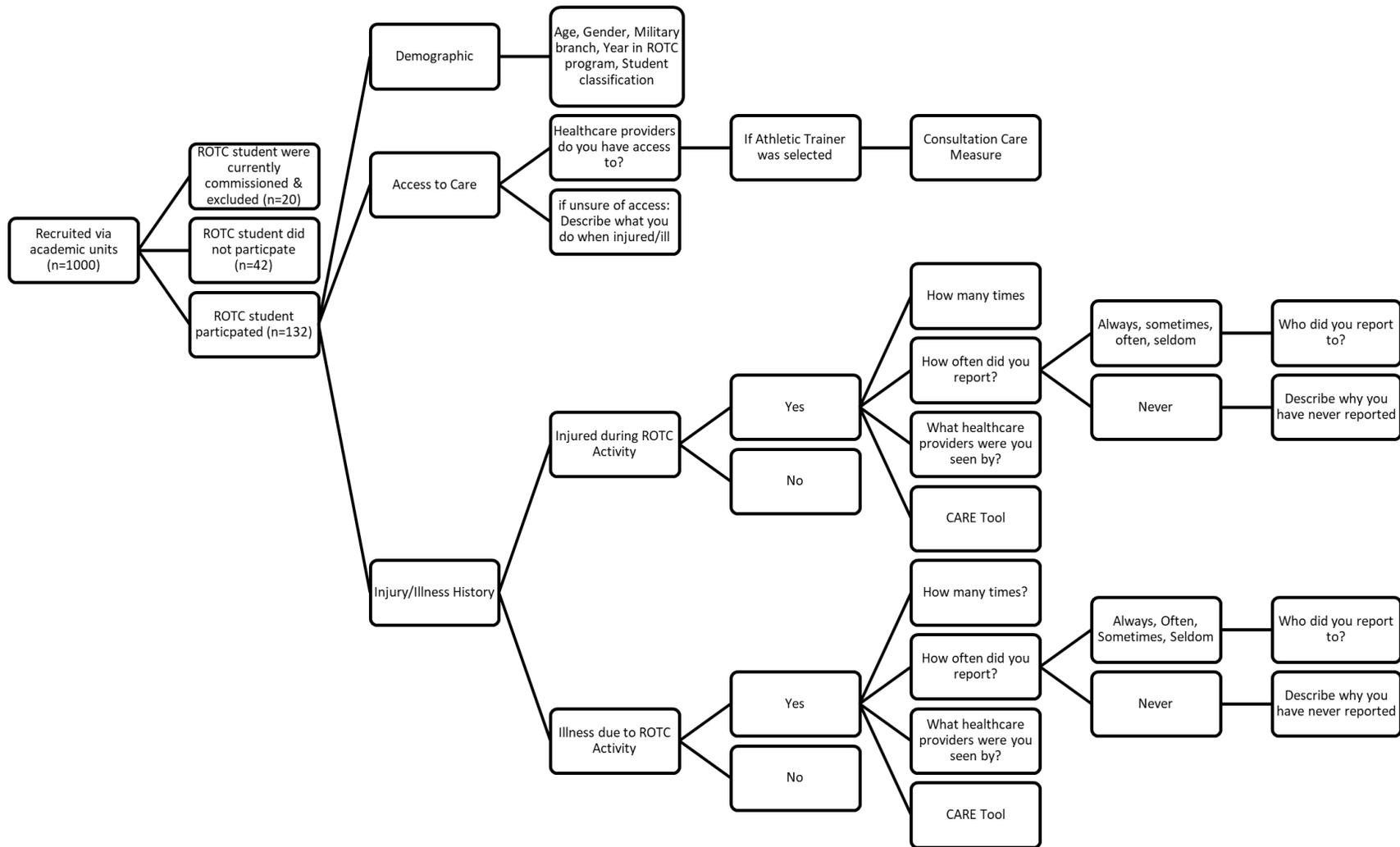


Figure 1. Survey Flow Chart

Statistical Analysis

Data were collected and stored in Qualtrics before being exported into and analyzed using Statistical Packages for Social Sciences (Version 26; IBM SPSS Statistics for Windows, Armonk, NY) for measures of central tendency (mean, median, mode, and standard deviations) and frequency statistics for the access to care and injury/illness reporting behaviors. A qualitative analysis was performed on the open-ended items specific to participants that were unsure or did not have access to healthcare providers. To do so, two members of the research team (CCC, DDD) independently reviewed all 75 open-ended responses and provided the principal investigator (AAA) and senior author (EEE) a list of common themes or words that appeared. After doing so, AAA and EEE met to code the responses into 8 themes for unsure and 2 themes for not reporting. The two initial members reviewed our coding to ensure trustworthiness of the process. For the patient-centered care tools, a total sum score was calculated for both the CCM tool and CARE tool per participant. Data were then compiled and analyzed by a group mean and standard deviation for the entire tools.

RESULTS

Participant Demographics

In total, 194 ROTC students started the study. From this sample, 16 responses were removed for not consenting to participate, 20 responses were removed as the participant identified as being commissioned by the US military which requires additional permission to participate in research, and 26 responses were removed for not completing at least 50% of the study. Therefore, 132 unique responses were analyzed (68% completion rate) which is similar to previous research on ROTC cadets^{20,21} and military athletic training research.²² Table 3 provides a full description of the ROTC participants demographic and school classifications.

Characteristic	n(%)
Sex	
Male	89 (67.4%)
Female	41 (31.1%)
ROTC Branch	
Army	74 (56.1%)
Navy	13 (9.8%)
Air Force	38 (28.8%)
Marine	5 (3.8%)
Year in Program	
1 st Year	60 (45.5%)
2 nd Year	35 (26.5%)
3 rd Year	25 (18.9%)
4 th Year	9 (6.8%)
Student Classification	
Freshman	35 (26.5%)
Sophomore	41 (31.1%)
Junior	33 (25.0%)
Senior	18 (13.6%)
Graduate	3 (2.3%)
Institution Classification	
Public 4-year college/university	108 (81.8%)
Private 4-year college/university	18 (13.6%)
Community/Junior College	3 (2.3%)
Historically Black College and University	3 (2.3%)

Table 3. Self-Reported Demographics of Current ROTC Participants. (ROTC = Reserve Officers Training Corp)

Access to Care

Overall, the ROTC cadets self-reported access to 2 ± 1 healthcare providers during ROTC activities. The most common healthcare providers that the participants noted as having access to include a designated civilian physician ($n=35$, 26.5%), athletic trainer ($n=31$, 23.5%), and ROTC peer first responder ($n=19$, 14.4%). Figure 2 provides percentage of respondents noting what healthcare providers they have seen as part of ROTC activities for injury and illness care.

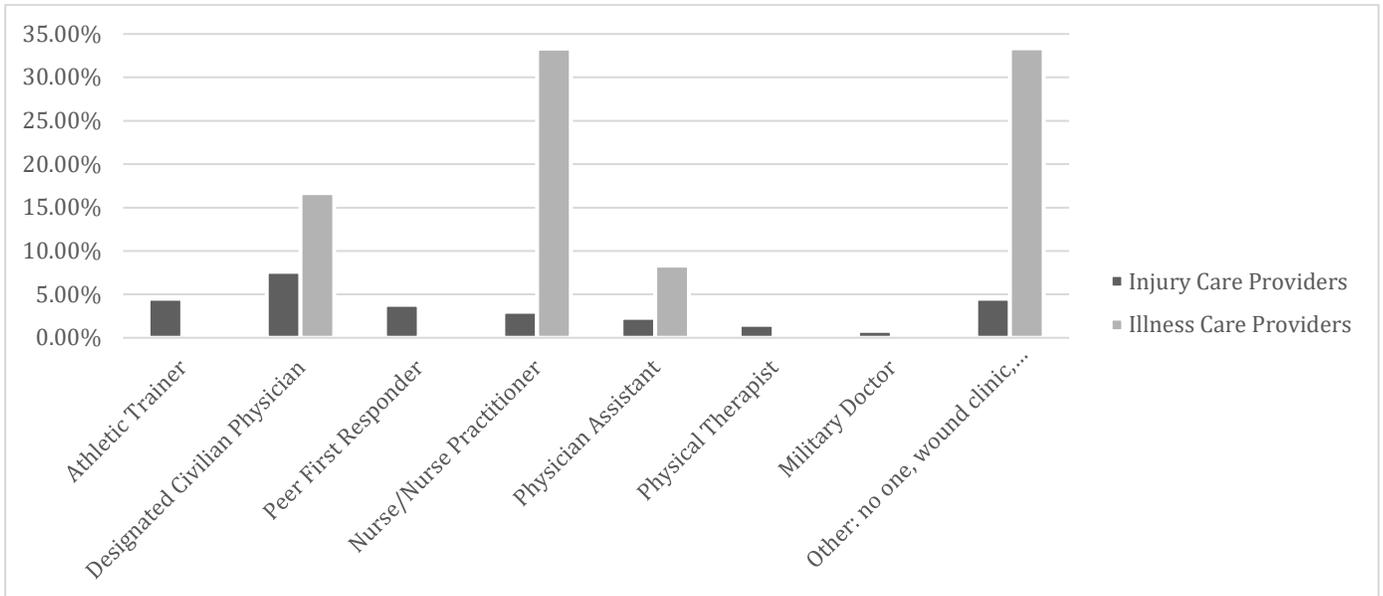


Figure 2. Injury and Illness Care Providers

Injury Reporting

In total, 22.7% (n=30) of cadets reported being injured and 26.5% (n=35) reported being sick/ill while participating in ROTC activities. Of those who stated they had sustained an injury during ROTC, 43.3% (n=18) of participants stated they seldom or never (n=5, 16.6%) reported their injury to someone else. The cadets who did report their injury mostly did so to another ROTC cadet/student leader (n=7, 5.3%) or a healthcare provider outside of the program (n=7, 5.3%). Of the 35 participants that reported being sick/ill, 37.1% (n=13) stated reported injuries: designated civilian physician (7.6%, n=10), athletic trainer (4.5%, n=6), peer first responder (3.8%, n=5), nurse (3.0%, n=4), physician assistant (2.3%, n=3), physical therapist (1.5%, n=2), and a military doctor (0.8%, n=1). There were a few that selected “other”, (4.5%, n=6) and described their provider as no one, a wound clinic, and a knowledgeable family or friend.

In addition, 50.8% of respondents (n=67) stated they were unsure what healthcare providers were available to them and others stating they did not report their injury or illness. The participants described what they

they almost always reported their illness. The cadets stated they often reported their illness to the ROTC program leader (n=14, 51.8%) or another ROTC cadet/student leader (n=10, 37.04%). Interestingly, over 46% of ROTC cadets stated they seldom (n=7, 23.3%) or never (n=7, 23.3%) reported their illnesses.

Participants who reported their illnesses were primarily cared for by a nurse/nurse practitioner (n=4, 33.3%), designated civilian physician (n=2, 16.67%), or unfortunately, no one (n=4, 33.33%). For those that sustained injuries, the following providers cared for r did in the case of injury and illness which is detailed in Table 4. The most common responses were that participants would report to their supervisor/cadre, go to the hospital/health center located at the university, visit their primary care provider, call 9-1-1, utilize personal insurance, stay at home until they felt better, and some participants have limited experience and stated they would not know what to do next.

	Category	Supporting Quotes
Unsure of Provider	Calling 911/Hospital	<ul style="list-style-type: none"> • “Alert the cadre and then go from there (whether that is a small fix or calling 911)” • “Consult someone to get help or call 911” • “Last year I had a severe leg laceration while training and was taken to the campus clinic then local emergency room for care. My care was paid for as a worker’s comp claim through the program. We don’t receive care from a specific person”
	Communicate with Cadre or other leadership	<ul style="list-style-type: none"> • “From what I know, I believe we might have a cadet or cadre member who is experienced in health needs. If the situation becomes too much for them to handle, we also call 911.” • “We just tell our chain of command which is usually another student a year or two above us. It is our squad leader’s responsibility to then tell headquarters.” • “We have some medical students that may help but last year when a situation occurred, cadre took over” • “We would contact someone in our chain of command (usually an officer or non-commissioned officer) about the issue and they would know what to do and who to contact if further medical care is needed.”
	University Health Center	<ul style="list-style-type: none"> • “Go to our school doctors/nurses and then if we choose not to do that, we then can go to a civilian doctor” • “Likely go to the University Health System, but unsure as to what exact options are available” • “The university healthcare system takes care of it, I think. I do not know what kind of medical professionals they have. I personally am able to access my civilian physician/doctor if something happens.”
	Personal Healthcare provider	<ul style="list-style-type: none"> • “During a mandatory ROTC activity, if a cadet is injured, they will go to their doctor and file an insurance claim with Tricare” • “Go to a physician that is accepted by my mom's insurance”
	Unsure do to new in program	<ul style="list-style-type: none"> • “I imagine I have plenty of resources available that I just don't know about. If I, or a fellow ROTC member needs one of those resources, I would just ask someone in charge.” • “I do not know because I am a freshman, and it has not come up yet.” • “I do not know this is my first semester in the program. I have my own doctor and the University provides additional care during COVID-19.” • “I honestly have no idea I have only been a cadet for a month”
	Emergency not experienced	<ul style="list-style-type: none"> • “I know since we're near a hospital for our labs we can rely on them, but I don't know how we would handle an actual Emergency because we never had one. One time after a cadet was hurt after field training exercise and from what I saw, nobody knew what to do or what was going on” • “I have not experienced an injury or someone around me, so I am not sure.”
	Wait/Stop Participation	<ul style="list-style-type: none"> • “If a fellow cadet is sick, they just email, and we wait until they get better. I assume they go to a family doctor or immediate care. If they are injured while doing stuff for ROTC, then we have a lady on site to help us if injured. If injured outside of ROTC, then I assume we just go to a doctor like normal.” • “If a fellow ROTC student or I become injured or sick during an ROTC activity, then we will most likely stop participating in ROTC activities that require physical activity such as Lab or physical training. I am not sure if the possible healthcare bills are to be paid for by ROTC or the student's own insurance.”

		<ul style="list-style-type: none"> • “Stay at home and do what you can to get better.”
	On vs Off Campus	<ul style="list-style-type: none"> • “This depends on where we are, if we are on campus there is a school nurse or doctor who may help if requested. If off-campus, cadets will use perform what they have been trained to do in an emergency until authorities who have been called arrive. This is only to my knowledge.” • “When you get sick or injured during a training or ROTC activity, which is when you are being provided care. If your injury is not ROTC activity related you provide your own care. I just enrolled in the program so I may not know much. This information is something I read online”
Injured ROTC Responses for Reasons Not Reported	Separation from program	<ul style="list-style-type: none"> • “Could result in separation from the program”
	Injury witnessed by others	<ul style="list-style-type: none"> • “The reason I got this injury was because I tripped during a march, so there were people around me who knew I was injured.”
	Little importance	<ul style="list-style-type: none"> • “It is not important, and nothing happens if I do” • “Just strained muscles/tendons” • “Low tolerance for lack of performance - regardless of cause. (except for corona or a serious bone break or severe medical emergency). Minor injuries such as joint pain, shin splints, etc. not tolerated or excused. Non-COVID related: low tolerance (must see a doctor and get a note to be excused –not a viable option for every injury/sickness)
Ill ROTCE Responses for Reasons Not Reported	Separation from program/expectations	<ul style="list-style-type: none"> • “It was non-COVID sicknesses must have a doctor’s note, which is not a viable option for students always. ROTC members are expected to push through any struggles that are not severe enough to be debilitating” • “Could perform at Standard no reason to report” • “I was concerned that if I reported my illness, I would be seen as complaining, or that if I stayed home, I would be perceived as not taking the program seriously.”
	Little importance	<ul style="list-style-type: none"> • “I did not think it mattered.” • “It was just a common cold both times.” • “I had a cold”

Table 4. Supporting Quotes from Open Ended Survey Items . (ROTC = Reserve Officers Training corps, COVID-19= Coronavirus

Patient-Centered Care Evaluations

On the CARE tool, an average score for patient-centeredness was 35.96±10.60 for injury treatment and 35.48±13.10 for illness treatment which can be interpreted as satisfied with their care, out of a total score of 50 points. Similarly, the CCM tool had a total score out of 50 points with an average score for patient-centeredness reported at 21.48±9.2 which can be interpreted as ranging from satisfied to very satisfied with care for either injury or illness.

DISCUSSION

The purpose of this study was threefold: 1) to explore ROTC cadets’ access to healthcare providers; 2) to examine the injury reporting behaviors for cadets; and 3) to understand

cadets’ perceptions of care from a patient-centered care perspective.

Access to Care

The findings indicate that provider’s accessible to participants at the ROTC level were consistent with those at the US military level.³ Providers utilized at the US military level include physical therapists, physicians, and nurses which is partially similar to the findings of our study in the fact that physicians and physical therapists were selected as healthcare providers for ROTC activities.³ In contrast, ATs were selected more than physical therapists which supports the increase of ATs seen at the military and ROTC levels.² The access to care via athletic training services for ROTC cadets is vastly different

than their student-athlete counterparts at most colleges and universities. Intercollegiate athletics has created a model that expects athletic training services be available to the student-athletes during their training sessions and contests. The access to care argument is typically based on the notion that ROTC cadets are also college students meaning they should have access to university healthcare services. However, there has been specific healthcare providers, such as athletic trainers, hired to manage and treat the injuries and illnesses for student-athletes.²³ There should be continued efforts to treat ROTC cadets like their student-athlete counterparts with access to care during and after training from providers with specific training for individuals with high energy expenditures and performance requirements.

Athletic training in the military setting is emerging, yet positive outcomes have been observed. To the author's knowledge, various colleges and institutions have implemented athletic training services in the ROTC population but its effects have yet to be reported. In addition to the on-site role presented in Figure 3, ATs can also implement a similar model to that of organized sports. Currently, some institutions who provide ROTC services implement athletic training services beyond on-site medical services and emergency care. Athletic trainers offer clinic hours and office visits by appointment for evaluation, treatment, and rehabilitation of injuries and illnesses.²³ Additionally, ATs have begun to establish communication lines with other healthcare providers from the university health services and local clinics to collaborate in the care of ROTC members specifically for policy development of injured and ill cadets. Lastly, ATs may provide cohesive communication with staff members of the ROTC program to alter training plans for the injured members, as well as provide education to both members and staffs on injury prevention and management through

the lens of nutrition, progressive exercise, and screenings.

Injury Reporting Behaviors

Three-fourths of the participants in our study stated they had not sustained an injury during ROTC activities, however due to the workload demands, previous literature outlines that most trainees sustain a documented injury during basic training, which is similar to the demands of physical training that ROTC members endure.^{17,22} In an attempt to graduate on time and avoid a "profile", meaning that the individual possesses a medical condition or physical defect that may require modifications, most ROTC participants do not seek care for injuries until the 3rd year.¹⁴ With our survey being completed primarily by freshman, sophomores, and within the first year of the program the participants may not have sustained an injury during basic training, physical training, or saw this study as a reporting platform and did not want to report an injury. Of the participants in our study, the majority (59.9%) seldom to never reported injuries. Consistent with previous literature examining musculoskeletal injuries in ROTC injured trainees, the majority (64%) did not report injuries to program leaders or medical providers.¹⁴ In contrast, more participants reported their illnesses to civilian physician and nurses. This could be due to the idea that an illness could be contagious and affect the other healthy cadets and potentially decrease the group's performance. However, the same idea could also be considered for injuries. If a participant sustains an injury and does not seek medical care/report and still wants to participate, the injury may decrease their performance and in turn decrease the group's performance.

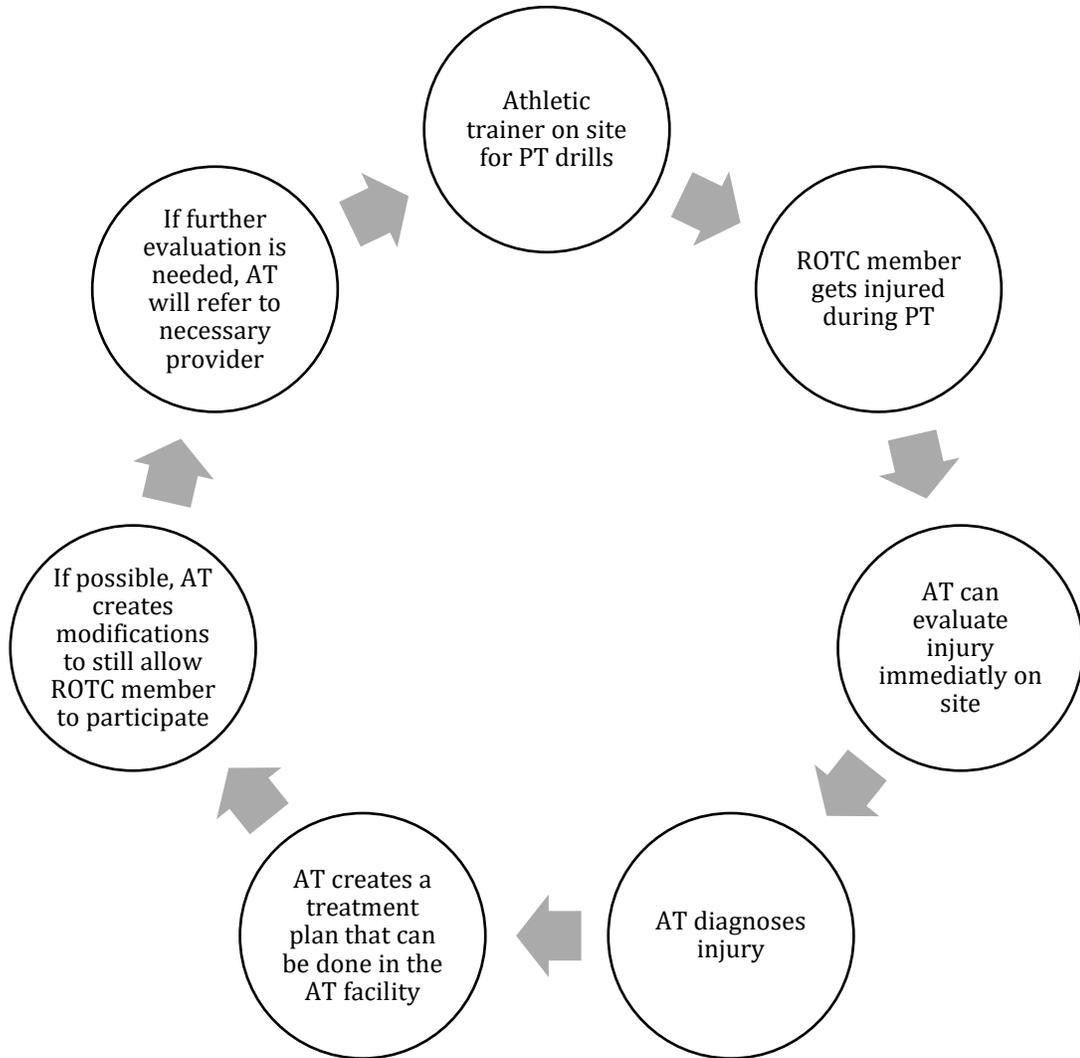


Figure 3. Athletic Trainers’ Potential Role in ROTC Activity. (AT = athletic trainer)

For those that did report an injury, equal percentages (5.3%) reported to a healthcare provider outside of the program or another student. Literature confirms the same reporting behavior by detailing similar results with cadre and medical providers being reported regarding injuries sustained during a ROTC training.⁹ In previous study conducted with the US Army, individuals who self-reported they were injured did not report to a healthcare provider on base.¹⁸ The same reporting behavior at both the ROTC and US military level highlights the reporting behaviors of participants and the need for ease of access to providers. Consistent with

our participants reasons for not reporting, including fear of being separated from the program and the injury not being severe enough, previous literature also expressed that fear of creating a “profile” or being perceived as “weak or broken” were additional reasons to avoid reporting injuries.^{9,18,19} Interestingly, enlisted soldiers and officers have similar care seeking behaviors during basic training, but vastly differ during secondary training whereby 30% of enlisted soldiers who were injured sought care compared to the 75% of military officers who sought care for their musculoskeletal injury.²⁴ We propose that this

difference is due to the leadership behaviors gleaned from the Officer Candidate School which is part of secondary training that takes enlisted soldiers after basic training to become commissioned leaders within the military. Previous literature highlights that leadership training influences behavior change through exposing them to experiences that encourage problem solving and critical thinking with an outlook on long-term implications for their decisions.¹² With ROTC programs providing roughly 60% of the second lieutenants in the US Army and more than 40% active duty general officers, leadership behaviors formed at the ROTC level directly translate to those at the US military level.^{10,13,14} The military is benefiting from ROTC programs as they are providing leaders and likewise should be investing to ensure the cadets have proper medical care and developing positive injury reporting behaviors. ROTC programs should consider expanding direct access to athletic trainers who can assist with injury and illness reporting and treatment at the point-of-care.

Previous literature has identified that participants with early access to athletic training interventions graduated with a higher level of military readiness.²³ Ease of access to ATs changed the cadre's perception of medical care.¹⁴ The research indicates that during basic training military recruits have some of the highest injury rates, specifically for stress fractures, due to the workload demands.⁷ However, the evidence for musculoskeletal injury reporting behaviors by US Army soldiers indicates that 49% of individuals who self-reported that they were injured did not report their case to the healthcare provider on the base.⁸ Not reporting to a provider on base directly mirrors the reporting behaviors demonstrated by the participants in our survey. The leadership and reporting behaviors gleaned during ROTC programs are translating to leadership and reporting behaviors at the US military level. A

contributing factor to infrequent reporting, which was detailed in our participant responses, is the fear and stigma that is expressed through the attitudes of the leadership as well as self-perceived fear of impact on career through a "profile" which places restrictions on training.^{8,9} Additional reasons for participants to not report is possibly linked to lack of introduction or education upon entering the ROTC program, lack of priority of injury/illness aid from cadre, the high turnover rate of cadre changing the reporting environment, limitations with insurance, and/or the role of the government inquiring about the process; however, there is a lack of data on reporting specific to ROTC and we must hypothesize these reasons based off military data.^{9,25} The cadre leadership have short stints with each ROTC program meaning that supervision and reporting practices may change often and could look different between ROTC cadets at the same institution depending on the branch. We suggest that the integration of AT as a care coordinator could mitigate the reporting behavior challenges identified in our study through promoting health and prevention rather than treatment and disease fostered through shared decision making.

Patient-centered Interactions

Participants scored their level of importance with healthcare providers and care provided during injury and illness management. For those who sustained an injury, the average ranged from very satisfied with care to dissatisfied with care. For those who sustained an illness, the average ranged from very satisfied with care to dissatisfied with care. Participants in our study who had interactions with ATs reported they ranged very satisfied to satisfied with care. Previous literature military recruits with integrated access to ATs felt more comfortable seeking care from the athletic trainer than having to seek a separate visit.^{14,23} The majority of the participants sought out a healthcare provider outside the ROTC program, which previous

research has determined most providers outside of the military are not confident in military knowledge and ability to discuss surrounding topics with the patient.²⁶ Provider knowledge is key in the patient-centered care model because it aids in collaborative decision making between provider and patient.⁹

Patient-centered care is the concept that incorporates all the aspects of healthcare and respectfully considers the needs, preferences, values, and goals of the patient.²⁷⁻³⁰ To be most effective in the situations, providers and patient should incorporate a shared-decision making model that allows both parties to express preferences and concerns related to healing.³⁰ There are eight aspects to patient-centered care that include 1) respect for patients' values, preferences, and expressed needs; 2) coordination and integration of care; 3) information, communication, and education; 4) physical comfort; 5) emotional support and alleviation of fear and anxiety; 6) involvement of family and friends; 7) continuity and transition; and 8) access to care.^{27,28} The CCM and CARE tools which evaluated ATs' patient-centeredness towards ROTC participants resulted in participants being very satisfied and satisfied with care received from ATs. Therefore, we suggest that ROTC programs should seek to hire ATs to provide patient-centered care to participants due to the positive relationship expressed in this data.

Limitations and Future Research

A limitation of our study included indirect contact to ROTC participants and multiple colleges/universities hosting several ROTC programs. These factors may have reduced our response amount and contact to a specific person. Moreover, the size of the ROTC

community is vast with an estimated 30-60,000 cadets enrolled and approximately 15,000 graduates entering their branch as an officer annually. While the data collected is a fraction of the potential sample population, there is currently no structure in place to accommodate nationwide research, like we attempted, for ROTC cadets leading to a myriad of research in basic recruits in the military and with college student-athlete counterparts. Therefore, the authors believe the data is meaningful to guide continued efforts to explore healthcare for this population from a more generalizable perspective. Finally, due to COVID-19, ROTC cadets may have had limited exposure to ROTC activity in a "normal" fashion including normal physical training activity, cadetship bonding, and traditional clinic hours for healthcare providers. Though still part of the ROTC program, they may not have been able to sustain an injury or illness related to ROTC activity. Future research should explore the patient-centeredness of providers from other health professions and how to improve the access to care for ROTC cadets through both university and governmental collaborations.

CONCLUSIONS

Overall, 50% of ROTC cadets reported a general unfamiliarity with the healthcare providers available to them. We also identified that illness reporting was higher than injury reporting, however the reporting was often to an ROTC program leader or peer cadet rather than a healthcare provider. Despite the reporting behaviors, the cadets reported being satisfied with the care they received. Future research should establish the integration of medical care resources within ROTC orientation and how proper implantation could increase access to care.

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