

Collegiate Student-Athletes' Perceptions of Patient-Centered Care Delivered by Athletic Trainers

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Context: The health care core competencies indicate that all medical professionals should provide patient-centered care (PCC), which is defined as care that is respectful and responsive to the patient's values and preferences, during each encounter.

Objective: To identify collegiate student-athletes' definitions of PCC and measure their perceived level of PCC from an athletic trainer (AT).

Design: Cross-sectional study.

Setting: Mixed-methods survey.

Patients or Other Participants: A total of 610 (age = 19 ± 1 year) National Collegiate Athletic Association student-athletes completed the survey.

Main Outcome Measure(s): The survey consisted of 1 open-ended question that prompted the participant to define PCC in his or her own words. The quantitative data were gathered using the Global Perceptions of Athletic Trainer PCC tool, which explores the overall agreement with the AT's use of PCC constructs. Finally, those participants who had received care from an AT completed the validated Patient Perception of Patient-Centeredness instrument. Qualitative analysis was completed through Text IQ technology with a mean sentiment

score attributed to each of the coded statements. We calculated descriptive statistics for all quantitative data.

Results: The qualitative analysis revealed 13 topics, with the most used being *individual*, *priority*, and *best*. Other topics were inconsistent with how the medical community has defined PCC. On the Global Perceptions of Athletic Trainer PCC tool, the participants expressed strong agreement (mode = 4) with 12 of the 15 statements. On the Patient Perception of Patient-Centeredness instrument, participants expressed that the AT was completely (mode = 4) patient centered for all dimensions during their most recent encounter. However, PCC behaviors, as defined by the medical community, may not be directly expressed according to collegiate student-athletes.

Conclusions: Student-athletes defined PCC as individualized and prioritized health care. They perceived that ATs provided care that kept their best interest in mind and practiced PCC during their encounters.

Key Words: National Collegiate Athletic Association, health care, whole person, core competency

Key Points

- Collegiate student-athletes viewed their athletic trainers as patient centered.
- The student-athletes identified their athletic trainers' weakness as goal setting.
- Patients defined patient-centered care as *individualized*, a *priority* for the provider, and the *best* care possible.

Patient-centered care (PCC) was a competency in medicine as early as the 1940s and has become a fundamental component of health care delivery.¹ Harvey Picker, the father of modern patient care, created the 8 domains of PCC in 1986 after observing the care his wife received for an incurable head and neck infection.² Through a series of focus groups with family members, hospital staff, and physicians, the fundamental tenets of PCC were defined.² Once these domains were established, PCC strategies quickly became principal components for all health care professions.² These domains are (1) respect for patients' preferences, (2) coordination and integration of care, (3) information and education, (4) physical comfort, (5) emotional support, (6) involvement of family and friends, (7) continuity and transition, and (8) access to care.² By incorporating these domains into each patient encounter, clinicians and patients alike are expected to perceive their interactions as more meaningful. Patient-

centered interactions not only lead to improved outcomes, such as patient satisfaction and more effective practices from the clinician,³ but also improve patient adherence to the plan of care.^{1,4}

The term *PCC* refers to interactions in medicine that are respectful, responsive, and tailor made to an individual's preferences and needs while ensuring that the patient's values guide all clinical decisions.⁵ This competency requires intentional education and relationship development to allow patients to make the most informed decision about their care. The purposes of PCC include increasing the value of health care for all patients, progressing patient outcomes, and improving their quality of life.⁶ However, PCC is often defined by what it is not: specifically disease-centered, technology-oriented, or provider-prescribed care.^{5–9} Patient-centered care has been observed and measured in other health care professions, such as nursing⁸ and physician practice.^{1,3,4} In these studies, investigators

addressed the tenets of PCC, including communication, satisfaction, and improving the delivery of care through the lens of productivity and efficiency; yet the work did not yield any insight into the input of the patient regarding the approaches delivered by the providers.¹⁰

In athletic training, research on PCC as a core competency has been limited, but topics such as patient satisfaction¹¹ and the overall concept of PCC have been addressed.¹² With respect to communication during an initial injury evaluation between collegiate student-athletes and athletic trainers (ATs), data were collected more than 20 years ago.¹³ The authors highlighted barriers in the domains of short- and long-term goal setting, comprehension of the diagnosis, and maintaining eye contact. Previous researchers⁷ found that clinicians became better equipped to provide patients with quality care when they inquired about each patient's goals. However, multiple discrepancies were demonstrated in the perceptions of both the ATs and patients, which underscored the need for patient-centered communication.¹³

With respect to the Institute of Medicine's core competencies for health care professionals,¹⁴ it is the fundamental responsibility of every AT to adapt and improve the standard of care for every patient. When ATs can begin to view patients as persons who are not defined by the illness or injury (eg, "the ACL girl"), they are providing PCC in its simplest form. Patients are also interested in being provided care in a manner that is customized to their environment and considers their life, work, and culture.¹⁵ Such interactions have been shown to improve patient outcomes, such as adherence to prescribed medications and home exercise plans, as well as patient-provider communication.¹⁶ As the patient's perspective of a medical interaction is fundamental to the likelihood of seeking care, we chose to highlight patient experiences that directly align with the 2019 Research Agenda of the National Athletic Trainers' Association Strategic Alliance Research Agenda Task Force,¹⁷ which identified that ATs need additional research on the extent to which PCC can aid in their clinical decision making. Therefore, the purposes of our study were to (1) examine what collegiate student-athletes believed constituted PCC and their perceptions of how well ATs at their institutions embodied the domains of PCC and (2) measure patients' perceptions of patient centeredness during their most recent encounter with an AT.

METHODS

Design

We used a cross-sectional research design to evaluate the perceptions of collegiate student-athletes as related to PCC delivered by ATs. This study was deemed exempt by the Indiana State University Institutional Review Board.

Participants

We recruited potential participants by contacting compliance officers at all National Collegiate Athletic Association (NCAA) Division I, II, and III institutions ($n = 1110$). To do so, we compiled a list of email addresses for the compliance officers after a web-based database and athletic program search. For institutions that did not have a

Table 1. Participant Characteristics

Characteristic	Frequency (%) ^a
Age, y, mean \pm SD	19 \pm 1
Gender	
Male	225 (36.9)
Female	384 (63.0)
Prefer not to say	1 (0.2)
National Collegiate Athletic Association Division	
I	157 (25.7)
II	190 (31.1)
III	263 (43.1)
Year in school	
Freshman	181 (29.7)
Sophomore	170 (27.9)
Junior	151 (24.8)
Senior	96 (15.8)
5th-year senior	7 (1.1)
Graduate student	4 (0.7)
Ethnicity	
African American	53 (8.7)
East Asian	4 (0.7)
Hispanic/Latino	25 (4.1)
Native American/Alaskan	2 (0.3)
Other	22 (3.6)
Pacific Islander	5 (0.8)
South Asian	1 (0.2)
White	494 (81.5)

^a Unless otherwise indicated.

compliance officer listed on the website ($n = 150$), we sent recruitment emails to the institution's athletic director. In total, 1110 emails were sent, and 34 emails were undeliverable; thus, 1076 emails were successfully sent for recruitment. Due to the nature of secondary recruiting and the publicly inaccessible participant population, it was impossible to calculate the access and response rates.

A total of 968 college student-athletes accessed the survey. From this sample, 341 (35.2%) of the individuals who accessed the survey did not consent to participate, only completed the demographic portion and were excluded, or consented but did not complete any part of the tool. An additional 17 recruits were removed from the sample, as they completed less than 60% of the tool. Therefore, the data from 610 NCAA student-athletes (males = 225, females = 384, preferred not to say = 1; age = 19 \pm 1 year) were used for the analysis (completion rate = 63%, $n = 610/968$).

Participants consisted mostly of females (63.0%, $n = 384/610$) in their first year of college (29.7%, $n = 181/609$) who attended an NCAA Division III institution (43.1%, $n = 263/610$). Full demographic information is presented in Table 1. Of the 610 participants, we analyzed open-ended responses from 582 collegiate student-athletes (qualitative completion rate = 95.4%).

Instruments

We constructed a multi-item survey to assess the collegiate student-athletes' perceptions of patient centeredness delivered by an AT based on their current opinions and previous experiences with their AT. The survey began with 6 demographic questions, followed by a prompt asking the participant to "Please define patient-centered care in your own words" with an open-ended passage box for the

Table 2. Global Perceptions of Athletic Trainer Patient-Centered Care^a

Rate your level of agreement with the following statement: I feel the athletic trainers at my college or university...	Score ^b		No. of Participants, n/N (%)			
	Mean \pm SD	Mode	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Agree</i>	<i>Strongly Agree</i>
Provide culturally competent care including respect to my gender, sexual orientation, race, and religion	3.52 \pm 0.93	4	37/609 (6.1)	5/609 (0.8)	125/609 (20.5)	432/609 (70.9)
Deliver care that is respectful of my preferences	3.48 \pm 0.76	4	15/568 (2.6)	14/568 (2.5)	194/568 (34.1)	339/568 (59.6)
Provide care that is respectful of, and responsive to, my individual preferences, needs and values, and ensuring that my values guide all clinical decisions	3.40 \pm 0.93	4	38/610 (6.2)	15/610 (2.5)	179/610 (29.3)	368/610 (60.3)
Inform me of my clinical status, process of care, and prognosis	3.30 \pm 0.92	4	16/568 (0.3)	27/568 (0.5)	223/568 (39.2)	284/568 (50.0)
Promote a healthy lifestyle to me	3.30 \pm 1.01	4	38/607 (6.3)	16/607 (2.6)	203/607 (33.4)	331/607 (54.5)
Provide me education and information regarding my health concerns	3.29 \pm 0.86	4	16/581 (2.8)	33/581 (5.7)	248/587 (42.6)	272/581 (46.8)
Address my pain management, activities of daily living, and my home and/or school environment	3.26 \pm 0.90	4	16/568 (2.8)	41/568 (7.2)	226/568 (39.7)	270/568 (47.5)
Recognize any conflict of interest that could adversely affect my health	3.24 \pm 0.97	4	12/580 (2.1)	24/580 (4.1)	245/580 (42.2)	272/580 (46.8)
Coordinate other care for me including diagnostic and therapeutic services	3.24 \pm 1.01	4	15/568 (2.6)	35/568 (6.2)	207/568 (36.4)	284/568 (50.0)
Has made me participate in practices, games, or competition when I was deemed “medically out of participation”	3.12 \pm 1.12	4	293/580 (50.5)	159/580 (27.4)	55/580 (9.5)	53/580 (9.1)
Address my access to care including transportation, ease of scheduling, and accessibility to specialist referral	2.99 \pm 1.00	3	15/532 (2.8)	29/532 (5.5)	304/532 (57.1)	151/532 (28.4)
Accommodate, respect, and support my decision to include family and friends in health care decision-making	2.96 \pm 1.05	3	14/533 (2.6)	14/533 (2.6)	314/533 (58.9)	149/533 (28.0)
Makes decisions that affect my current or future health status after an injury or illness without influence from coaches	2.87 \pm 1.25	4	48/580 (8.3)	60/580 (10.3)	191/580 (32.9)	232/580 (40.0)
Address my potential fears and anxieties regarding my clinical status, the financial effect of the injury, and the effect of their condition on others	2.74 \pm 1.15	3	23/534 (4.3)	45/534 (8.4)	293/534 (54.8)	119/534 (22.3)

^a Items are presented in their original format.

^b Responses were scored as 1 (*strongly disagree*), 2 (*disagree*), 3 (*agree*), or 4 (*strongly agree*) according to how well the student-athlete perceived the athletic trainer had demonstrated patient-centered care.

response. After defining PCC, the participants completed 2 multi-item tools.

The Global Perceptions of Athletic Trainer PCC tool contains 15 items measured on a 4-point Likert scale (1 = *strongly disagree*, 4 = *strongly agree* with an unscored “*unsure*” option; Table 2) that ask participants to rate their level of agreement with statements regarding how they felt the ATs at their college or university exemplified PCC. We designed this portion of the instrument using the Picker 8 domains and the principles that support each domain.² After we developed the statements, an external expert in PCC relative to athletic training reviewed them for accuracy and reliability to ATs. The external reviewer provided minor edits of grammar and flow of items. The tool has demonstrated strong internal consistency (Cronbach α = 0.897).

The second tool was adapted from the validated and reliable Patient Perceptions of Patient Centeredness (PPPC) questionnaire.¹⁰ This tool contains 14 items about the patient’s opinion of the most recent encounter or experience with the college or university AT measured on a 4-point Likert scale (1 = *not at all*, 4 = *completely*). This tool measures 3 factors: (1) exploring the disease and illness, (2) understanding the whole person, and (3) finding common ground.¹⁸ The tool has demonstrated strong internal consistency (Cronbach α = 0.946).

Procedures

The recruitment email that was forwarded by the institutional representative to the collegiate student-athletes described the study and provided directions for completing the survey as well as a direct link to the survey via a secure, web-based system (Qualtrics LLC). We sent reminder emails to the compliance officers every week for 4 weeks (September 2019) and closed the survey in the 5th week (October 2019). By clicking a link in the recruitment email, volunteers were taken to the electronic informed consent. After agreeing to participate, they were then directed to the survey to answer only the questions they wanted to and could close the browser at any time. Individuals were asked if they had seen an AT for injury evaluation, health care services, or treatment since being a student-athlete at their college or university; 453 of those 532 respondents (85.2%) stated they had seen an AT, which prompted them to complete the PPPC tool.

Data Analysis

The data were collected and stored on the web-based platform. For the open-ended response (n = 582) that asked the participant to define PCC, we applied inductive coding with an in vivo approach in order to use the person’s own

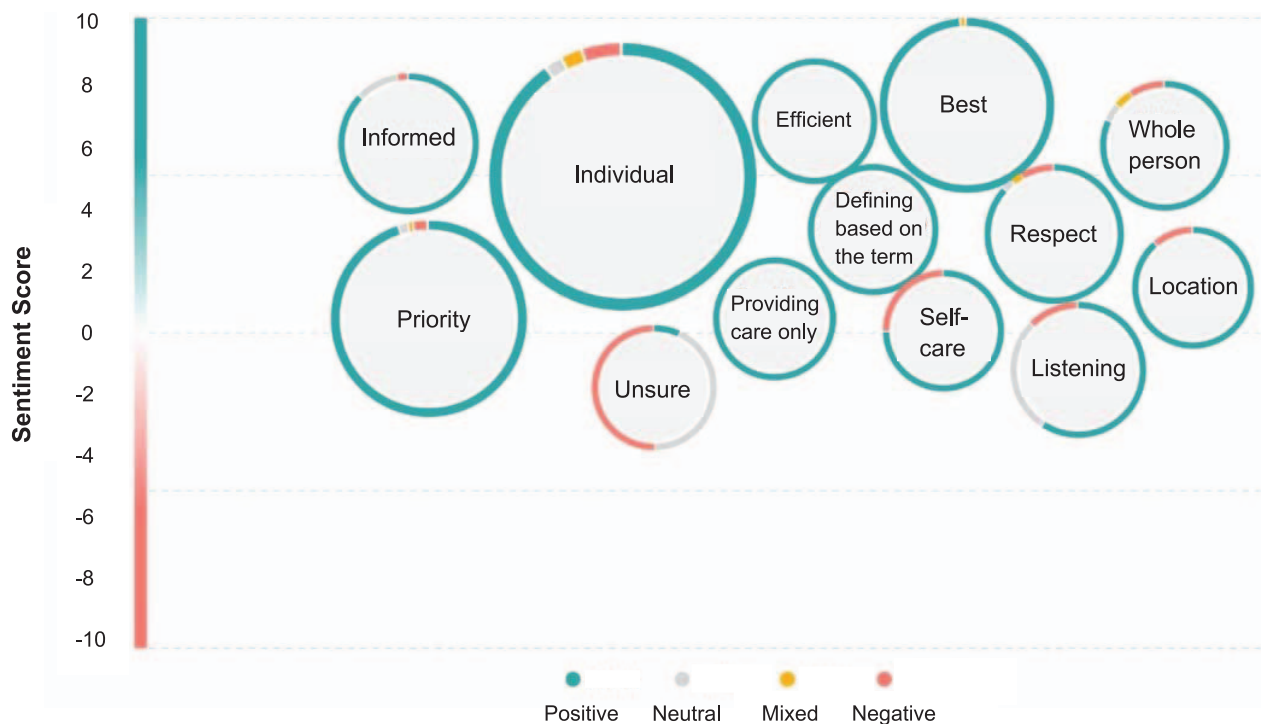


Figure. Text IQ topics from Qualtrics qualitative analysis and mean sentiment score.

language. This coding was completed using Text IQ technology (Qualtrics LLC) in which personal opinions were coded using natural language processing with machine learning via lexical algorithms. From the software analysis, 10 recommended topics emerged. We then cross-analyzed the first 100 responses with the recommended topics that resulted in the addition, confirmation, and combination of new topics. Additionally, the Text IQ technology provided an overall sentiment score for each coded statement and these were compiled as a topic sentiment score. The more frequent the response, the larger the display bubble. These scores ranged from -10 (negative) to +10 (positive), with 0 as the neutral score. Data from this qualitative analysis included a quantitative representation and mean sentiment score (MSS) per topic, which was represented by a color (green = positive, white = neutral, yellow = mixed, red = negative).

After data collection, we exported the quantitative data to SPSS (version 26; IBM Corp) for all quantitative analyses. These analyses consisted of frequency counts, means, modes, and SDs of the responses on the Likert scales.

RESULTS

Defining PCC

For the qualitative analysis, PCC was defined and measured via the MSS generated using the web-based system. The qualitative analysis revealed 13 topics (in order of frequency; Figure): *individual* ($n = 232$, $MSS = 3.7$), *priority* ($n = 125$, $MSS = 3.6$), *best* ($n = 92$, $MSS = 5.6$), *informed* ($n = 42$, $MSS = 3.8$), *respect* ($n = 38$, $MSS = 4.0$), *listening* ($n = 32$, $MSS = 1.0$), *defining based off [sic] the term* ($n = 24$, $MSS = 3.6$), *whole person* ($n = 23$, $MSS = 3.9$), *efficient* ($n = 16$, $MSS = 4.7$), *unsure* ($n = 14$, $MSS = 0.0$), *providing care only* ($n = 12$, $MSS = 2.3$), *location* ($n =$

9, $MSS = 3.2$), and *self-care* ($n = 8$, $MSS = 2.0$). The most common topic, *individual*, explored health care tailored to one's needs and wants and one-on-one time. The topic of *priority* emphasized putting the patient first with the attention and focus solely on him or her. *Best* described the AT's role in doing everything possible and providing quality care. Additional topics were *being involved*, *providing options and comfort*, *active listening*, *immediate attention*, and *exploring all dimensions of wellness*. The remaining topics (*defining based on the term*, *unsure*, *providing care only*, *location*, and *self-care*) were inconsistent with how the medical community has defined PCC. Other responses from the student-athletes regarding these topics are provided in Table 3.

Global Perceptions of Athletic Trainer PCC Tool

Participants expressed strong agreement (mode = 4) with 12 of the 15 statements (Table 2). The 2 highest ranked statements were that the respondents felt the ATs at their college or university provided culturally competent care with regard to gender, sexual orientation, race, and religion (mode = 4, 60.3%) and delivered care that was respectful of their preferences (mode = 4, 59.6%). The 2 lowest ranked statements (mode = 3) addressed the ATs' ability to address their fears and anxiety regarding their clinical status, finances, and effect on others (mean = 2.75 ± 1.15 of 4) and the involvement of family and friends in health care decision making (mean = 2.96 ± 1.06). Only 8% ($n = 48$) of participants *strongly disagreed* that an AT had the ability to make a health status decision without influence from coaches. A total of 18.6% ($n = 108$) of respondents reported that an AT made them participate when they were medically disqualified, meaning the AT allowed the individual to return to play before being cleared or prepared to participate in the activity.

Table 3. Participants' Open-Ended Responses

Topic ^a	Supporting Quotations (Sentiment Score)	
1. Individual	"When being treated, my issue is being determined and treatment is being planned in a manner that is unique to me, my body, and my lifestyle." (7)	"Very one on one based. I feel like I am being treated as not only an athlete but as the person I am." (1)
2. Priority	"Athletic trainers give their time and schedule around the patient." (1)	"I think this means that when a patient needs you or assistance, that you are there for them, not halfway doing your job or not paying attention to what they need. You are focused on them and are there for their needs." (4)
3. Best	"Patient-centered care to me means to utilize all resources that may be beneficial for each specific patient one has. Additionally, I feel like knowledge about one's patient is also important. The ability to empathize and relate to a patient is also very important when treating and giving care to them." (9)	"Providing medical help to aid the athlete with their injuries/issues within their preferences to best help them participate and compete to the best of their abilities to maximize the opportunities of success in their respective sports." (10)
4. Informed	"Patient-centered means that the patient has more of a say in the type of treatment they receive." (2)	"The problem/injury is more important for the student-athlete than the inquiry of an athletic trainer." (-1)
5. Respect	"Patient-centered care in my opinion is when a patient comes to the student health center; they are treated with respect; and when they are being spoken to, they are the only person to [sic] physician is paying attention to. Making sure that the patient feels welcomed, comfortable, and cared for." (8)	"Patient-centered care to me means attending to the individual needs of all athletes. Not just the soccer teams or the basketball teams. Every athlete that walks through the door, whether it be a star on the basketball team or a freshman on the track team, should be treated with the same care and attentiveness. That means thoroughly diagnosing the issue at hand, relieving the symptoms, coming up with some kind of ongoing care/treatment plan, and following up with the athlete afterwards." (8)
6. Listening	"Patient-centered care is when the athletic trainer listens to what you say, when I say that I mean really listen and not say "You just need to ice it or heat it or roll it." They shouldn't ignore when we say that something actually hurts because not everything is JUST sore. I feel as if, if we are constantly telling the [athletic] trainer that something on your body is hurt and they just keep telling us that it is sore that it gives us the sense that either they are lazy or simple just don't care. We shouldn't have any thoughts on whether or not our [athletic] trainer actually cares about our wellbeing with anything other than a concussion because that's the only thing they really make sure that they actually give you treatment." (-4)	"I believe patient-centered care involves taking the time to actually listen to what is bothering the athlete. If they have a problem, let them fully explain what they are feeling and try to fix the problem. Not just fix the problem but follow up and do your best to make sure they are healthy. It revolves around the patient." (5)
7. Defining based off [sic] the term	"Care that is centered around a patient." (4)	"It is when the patient is in the center of care." (4)
8. Whole person	"Patient-centered care is treatment centered around the patient that adapts and changes with them, gives them some power in the decision-making process, and treats the whole body and mind." (6)	"Physical and mental care that focuses on the individual patient's needs, concerns, and availability." (3)
9. Efficient	"When health care professionals are not concerned with turnover or profit and are more focused on returning their patients to health in a timely and sufficient manner." (6)	"Getting seen quickly by ATR staff and when I have an issue it is identified quickly what the issue is and the treatment is specific to my needs and effective." (9)
10. Unsure	"I honestly can say I have no clue what this means." (-1)	"I have never heard of this term before." (1)
11. Providing care only	"Medical attention for student body." (1)	"When the [athletic] trainer helps the athlete." (1)
12. Location	"Patient-centered care is digital health care." (6)	"Care that puts the patient in the middle of the room." (4)
13. Self-care	"Taking care of yourself before taking care of others." (5)	"When the injured takes primarily care of themselves." (2)

Abbreviation: ATR, athletic training room.

^a Listed in order of frequency.

Table 4. Patients' Perceptions of Patient Centeredness^a

Prompt: In reference to your most recent encounter or experience with the athletic trainer...?	Score ^b		No. of Participants, n/N (%)			
	Mean \pm SD	Mode	<i>Not at All</i>	<i>A Little</i>	<i>Mostly</i>	<i>Completely</i>
To what extent did the athletic trainer understand the importance of your reason for coming in	3.62 \pm 0.63	4	4/439 (0.91)	25/439 (5.7)	103/439 (23.5)	307/439 (69.9)
How much would say this athletic trainer cared about you as a person	3.58 \pm 0.69	4	7/426 (1.6)	30/426 (7.0)	96/426 (22.5)	293/426 (68.7)
How much opportunity did you have to ask your questions	3.57 \pm 0.68	4	4/430 (0.9)	40/430 (9.3)	91/430 (21.1)	295/430 (68.6)
To what extent did the athletic trainer understand you	3.56 \pm 0.67	4	6/441 (1.4)	28/441 (6.3)	120/441 (27.2)	287/441 (65.1)
To what extent was your main problem(s) discussed	3.54 \pm 0.67	4	2/441 (0.5)	40/441 (9.1)	116/441 (26.3)	283/441 (64.4)
To what extent did the athletic trainer know that this was one of your reasons for coming in	3.51 \pm 0.77	4	14/440 (3.2)	35/440 (8.0)	103/440 (23.4)	288/440 (65.4)
To what extent did the athletic trainer explain the diagnosis or treatment	3.45 \pm 0.79	4	13/428 (3.0)	42/428 (9.8)	111/428 (25.9)	262/428 (61.2)
How satisfied were you with the discussion of your problem	3.45 \pm 0.78	4	15/441 (3.4)	37/441 (8.4)	123/441 (27.8)	266/441 (60.3)
To what extent did you agree with the athletic trainer's opinion about the problem	3.42 \pm 0.79	4	16/440 (3.6)	38/440 (8.6)	130/440 (29.5)	256/440 (58.1)
To what extent did the athletic trainer explain this problem to you	3.41 \pm 0.79	4	12/441 (2.7)	51/441 (11.5)	121/441 (27.4)	257/441 (58.2)
To what extent did the athletic trainer explore how manageable this condition would be for you	3.37 \pm 0.85	4	18/428 (4.2)	52/428 (12.1)	111/428 (25.9)	247/428 (57.7)
To what extent did the athletic trainer encourage you to take the role you wanted in your own care	3.31 \pm 0.88	4	25/427 (5.9)	44/427 (10.3)	129/427 (30.2)	229/427 (53.6)
To what extent did you and the athletic trainer discuss your respective roles (who is responsible for making decisions and who is responsible for what aspects of your care)	3.22 \pm 0.97	4	36/427 (8.4)	57/427 (13.3)	109/427 (25.5)	225/427 (52.6)
To what extent did the athletic trainer ask you about your goals for the evaluation or treatment	3.05 \pm 1.01	4	46/428 (10.7)	73/428 (17.0)	122/428 (28.5)	187/428 (43.7)

^a Items are presented in their original format.

^b Responses were scored as 1 (*not at all*), 2 (*a little*), 3 (*mostly*), or 4 (*completely*) relative to how well the athletic trainer demonstrated patient-centered care during their most recent encounter.

Patient Perceptions of Patient Centeredness

On the PPPC instrument, participants expressed that the AT was *completely* (mode = 4) patient centered for all dimensions during their most recent encounter (Table 4). Specifically, 93.3% identified their AT as having *completely* (307/439) or *mostly* (23.4%, 103/439) understood the importance of their reason for seeking care (mean 3.62 \pm 0.63, mode = 4). In contrast, only 43.7% of respondents indicated that their AT *completely* (187/428) asked them about their goals for the evaluation or treatment. A total of 53.6% (n = 229/427) of ATs *completely* encouraged participants to take the role they wanted in their own care. The ATs also discussed their respective roles in the person's care *mostly* (25.5%, 109/427), *just a little* (13.3%, 57/427), or *not at all* (8.4%, 36/427).

DISCUSSION

The important perspective of the student-athlete was a central component of our study and one that has been previously overlooked. With regard to the National Academy of Medicine's core competencies for health care professionals,¹⁴ it is the fundamental responsibility of every AT to be able to adapt and improve the standard of care for every patient.⁶ We found that student-athletes believed that ATs had an overall positive influence in their interactions with patients and were respectful of patients' needs and preferences. In addition, the student-athletes indicated they valued individualized care, one-on-one interactions, and

knowing the AT had their best interest in mind. Although clinicians may be providing care that would be deemed patient centered by their patients, it might be important to educate patients on the definition of holistic PCC beyond what they may have seen in a collegiate athletic training facility.⁶ In addition, ATs should improve their decision making in specific instances to avoid external pressures and return patients to sport safely.

Athletic Trainers' Strengths in Delivering PCC

When we asked student-athletes to consider the definition of PCC, 13 topics emerged. The most frequent responses demonstrated that the student-athletes wanted the care to be individualized, they should be prioritized, and the AT should deliver the best care possible. Individualized patient care is a major component in patient centeredness, as it ensures that the plan of care is tailored to the patient's preferences and needs.⁵ A sound relationship between the patient and provider is essential in all phases of treatment¹⁹; however, initial encounters determine if the patient will return for further care, making the first contact the most meaningful and important.¹⁹ These characteristics of PCC revealed that student-athletes valued care that was specific to them and based on their needs. The PPPC questionnaire results reflected the student-athletes' perceptions of ATs being patient centered during their most recent encounter. These included the AT's understanding of the importance of the encounter, knowledge as to why the patient sought

care, and the opportunity for the student-athlete to ask questions.

The student-athletes valued being a priority and having the attention of the AT focused solely on them. Active listening techniques and attentiveness promote the patient's trust and display compassion, a valued attribute of a patient-centered provider.¹³ The participants indicated they valued the ATs' doing everything they could to provide quality care, which included a holistic approach to health care. These findings are consistent with those of researchers²⁰ who found that patients had a strong desire for the provider to consider the physical, mental, and social aspects of their lives in order to fully understand how the provider could best care for them. Similarly, providing individualized information followed by any necessary clarification, acknowledgment from the staff, and recognition of the patient as a person versus a disease or injury promoted patient participation in care.²¹ These results align with the definition of PCC and further support the need for individualized and tailored interactions with a clinician.

Overall, the student-athletes agreed that their ATs demonstrated characteristics of patient centeredness. According to the Global Agreement tool, participants described ATs as being completely patient centered in areas such as cultural competency, empathy, and respect for patients' preferences. When patients were involved in their own health care decisions, they reported a higher level of function and fewer costs associated with their injuries and illnesses.¹⁶ Patients who self-managed chronic illnesses also demonstrated improved and more frequent communication with their providers in addition to reduced time in the hospital.¹⁵ Regarding their most recent encounter with an AT, the student-athletes felt they were understood, informed, and cared for. Many of the responses on the Global Agreement tool signaled the student-athlete's strong agreement with the AT's respect for his or her needs and preferences. This finding is consistent with that of previous investigators²² who recognized a relationship between patient satisfaction and the health care provider's ability to connect with the patient.

Mechanisms to Improve PCC

Patient-centered care is characterized by efforts to listen, inform, and educate patients in shared decision making with the clinician. Such care goes beyond the empathetic questioning of patients and is more focused on organizing care to emphasize the partnership between patient and clinician.²³ However, ATs have historically been "all things to all patients." This enabled patients to become reliant on their ATs to intercede on their behalf regarding health care decisions. In the long run, these actions are not patient centered and do not empower the patient to take control of his or her care. In our study, the statements with the lowest scores magnified areas in which the ATs did not demonstrate behaviors that supported PCC tenets. Specifically, student-athletes believed the ATs were unable to address their fears relative to how their clinical status affected other areas of their lives. To implement all domains of PCC, emotional support should be addressed by health care providers during the initial encounter. This support includes identifying the concerns patients have

about the effect their clinical status may have on their physical wellbeing, finances, and the burden on others.⁶

The respondents in this study cited continuity of care, concerns regarding their clinical status, and inclusion of their support system as areas in which their ATs were less patient centered. The inclusion of a support system, such as one's family and friends, has a positive effect on a patient's satisfaction with care and the symptom burden.²⁴ Our collegiate student-athletes felt this was one of the areas least often implemented by ATs. It is possible that because these student-athletes were adults, consultation with their support system, which many presume would be their parents or guardians, was not warranted due to health care privacy regulations. However, clinicians should be mindful about asking patients whom they identify as their social support system and if and how they would like these individuals integrated into their care planning. Patients need to know they can access care when needed and have the ability or resources to care for themselves (often supplemented by their support networks) after they are discharged by the clinician.² The health care provider should know which protected health information can be provided to the patient's support system and should apply reasonable safeguards to communication. Engaging with patient support networks helps to alleviate the patient's many stressors associated with injury, illness, and an altered relationship with sport and can aid the clinician in delivering effective PCC.

Another area in which the ATs struggled to integrate PCC tenets was the influence of the coach on the care provided to the patient. A medical professional, specifically an AT or physician, is the only person qualified to make decisions about returning a patient to activity and should not feel pressured or influenced by external personnel.²⁵ Additionally, patients should not be forced to participate in activities if their goals have not been met and they are not physically prepared. Doing what is best for the patient despite outside pressures characterizes PCC. Our results indicated that 1 in 5 student-athletes perceived their ATs were unable to make a health care decision without influence from outside persons. Similar to the results of previous authors,²⁶ our respondents identified a gap when the health care provided conflicted with outside pressure. Other investigators²⁷ also acknowledged that sports medicine clinicians experienced external pressures from coaches, other clinicians, and patients themselves when considering a return to play.

In the current study, almost 20% of participants *agreed* or *strongly agreed* that an AT made them participate when they were medically disqualified. Providing care that is patient centered involves not only doing what is best for the patient despite outside pressure but also "recognizing responsibilities to one's self, the patient and to the profession."²⁸ Athletic trainers should be providing care that ensures the patient's values are guiding all clinical decisions, irrespective of the coach's input. The 2019 NCAA "Independent Medical Care" briefing document highlighted the need for schools to uphold standards that empower, encourage, and support ATs to make decisions that are in the best interest of the patient.²⁹ Conflicts of interest among stakeholders may cause more harm to the patient's wellbeing and be "detrimental to player welfare."³⁰ We recommend that personnel involved with either

the organization itself or the sponsorship of athletic activities recognize that the unchallengeable medical oversight for student-athletes should be given to the AT. In providing medical oversight, the AT must be engaged with the development and implementation of policies that are patient centered, further emphasizing that non-health care personnel should not be involved in medical decision making.²⁹

According to our respondents, the ATs failed to identify their goals. This finding was similar to a 1994 report¹³ in which collegiate student-athletes stated that their ATs displayed deficits in goal setting. To be fully patient centered, the AT, in conjunction with the patient, should address realistic and obtainable goals that are crucial for the duration of the plan of care.¹³ Strategies for goal setting include identifying the initial reason for the encounter, stating the available time in which questions and concerns will be addressed, and creating short- and long-term goals that match the patient's preferences with his or her desired health outcome.

Limitations and Future Research

Our study had several limitations related to our access to collegiate student-athletes. Instead of having direct access to participants, we were put in contact with compliance officers and athletic directors (if necessary). These personnel decided whether to pass on the survey, which means that not all NCAA collegiate student-athletes had access to the survey. Another possible limitation was the bias of the patient toward his or her AT. However, we did not ask about the frequency with which the student-athlete interacted with the AT or whether this was the first encounter, which may have affected the findings.

In this project, we explored the patient's generalized perspective, specifically after the most recent encounter with his or her AT. Based on the type of study and the standard survey limitations, we were unable to triangulate the perceptions of the participants. For this reason, we suggest that future researchers pursue AT self-appraisals, supervisor or peer evaluations, and even direct observations. Additional investigation that results in rich, descriptive data relative to the patient's experience with the ATs' application of PCC will also further this line of inquiry.

CONCLUSIONS

The medical community has characterized PCC through its own lens, but according to the student-athletes we surveyed, ATs were perceived as patient centered even if they did not embody all the characteristics described in the literature. According to the participants' definitions of PCC, they thought ATs should be providing the *best* care that was *prioritized* and *individualized* to them. The PPPC scale scores indicated that ATs were successfully implementing patient-centered behaviors, which further emphasizes the value of ATs in collegiate athletics. These findings showed that ATs were an asset to this patient population but that they should strive to implement more components of PCC during their patient encounters to deliver high-quality health care. Athletic trainers should continue to be intentional in improving their goal setting, incorporating support systems, recognizing patients' fears, and avoiding the influence of nonmedical personnel during patient care.

REFERENCES

1. Davis K, Schoenbaum SC, Audet AM. A 2020 vision of patient-centered primary care. *J Gen Intern Med*. 2005;20(10):953–957.
2. The eight principles of patient-centered care. Oneview Web site. <https://www.oneviewhealthcare.com/the-eight-principles-of-patient-centered-care/>. Published 2015. Accessed October 8, 2020.
3. Weiner SJ, Kelly B, Ashley N, et al. Content coding for contextualization of care: evaluating physician performance at patient-centered decision making. *Med Decis Making*. 2014;34(1):97–106.
4. Epstein RM, Franks P, Fiscella K, et al. Measuring patient-centered communication in patient-physician consultations: theoretical and practical issues. *Soc Sci Med*. 2005;61(7):1516–1528.
5. Bensing J. Bridging the gap. The separate worlds of evidence-based medicine and patient-centered medicine. *Patient Educ Couns*. 2000;39(1):17–25.
6. Epstein RM, Fiscella K, Lesser CS, Stange KC. Why the nation needs a policy push on patient-centered health care. *Health Aff (Millwood)*. 2010;29(8):1489–1495.
7. American Geriatrics Society Expert Panel on Person-Centered Care. Person-centered care: a definition and essential elements. *J Am Geriatr Soc*. 2016;64(1):15–18.
8. Köberich S, Farin E. A systematic review of instruments measuring patients' perceptions of patient-centred nursing care. *Nurs Inq*. 2015;22(2):106–120.
9. Rathert C, Wyrwich MD, Boren SA. Patient-centered care and outcomes: a systematic review of the literature. *Med Care Res Rev*. 2013;70(4):351–379.
10. Hudon C, Fortin M, Haggerty JL, Lambert M, Poitras ME. Measuring patients' perceptions of patient-centered care: a systematic review of tools for family medicine. *Ann Fam Med*. 2011;9(2):155–164.
11. Unruh S. Perceptions of athletic training services by collegiate student-athletes: a measurement of athlete satisfaction. *J Athl Train*. 1998;33(4):347–350.
12. Laursen RM. A patient-centered model for delivery of athletic training services. *Athl Ther Today*. 2010;15(3):1–3.
13. Kahanov L, Fairchild PC. Discrepancies in perceptions held by injured athletes and athletic trainers during the initial injury evaluation. *J Athl Train*. 1994;29(1):70–75.
14. Albarqouni L, Hoffmann T, Straus S, et al. Core competencies in evidence-based practice for health professionals: consensus statement based on a systematic review and Delphi survey. *JAMA Netw Open*. 2018;1(2):e180281.
15. Greiner AC, Knebel E. The core competencies needed for health care professionals. In: Greiner AC, Knebel E, eds. *Health Professions Education: A Bridge to Quality*. Washington, DC: National Academies Press; 2003.
16. Vahdat S, Hamzehgardeshi L, Hessam S, Hamzehgardeshi Z. Patient involvement in health care decision making: a review. *Iran Red Crescent Med J*. 2014;16(1): e12454.
17. Eberman LE, Walker SE, Floyd RT, et al. The prioritized research agenda for the athletic training profession: a report from the Strategic Alliance Research Agenda Task Force. *J Athl Train*. 2019;54(3):237–244.
18. Ryan BL, Brown JB, Tremblay PF, Stewart M. Measuring patients' perceptions of health care encounters: examining the factor structure of the Revised Patient Perception of Patient-Centeredness (PPPC-R) Questionnaire. *J Patient Cent Res Rev*. 2019;6(3):192–202.
19. Stewart MA. What is a successful doctor-patient interview? A study of interactions and outcomes. *Soc Sci Med*. 1984;19(2):167–175.
20. Raja S, Hasnain M, Vadakumchery T, Hamad J, Shah R, Hoersch M. Identifying elements of patient-centered care in underserved populations: a qualitative study of patient perspectives. *PLoS One*. 2015;10(5):e0126708.

21. Eldh AC, Ekman I, Ehnfors M. Conditions for patient participation and non-participation in health care. *Nurs Ethics*. 2006;13(5):503–514.
22. Kvåle K, Bondevik M. What is important for patient centred care? A qualitative study about the perceptions of patients with cancer. *Scand J Caring Sci*. 2008;22(4):582–589.
23. Santana MJ, Manalili K, Jolley RJ, Zelinsky S, Quan H, Lu M. How to practice person-centred care: a conceptual framework. *Health Expect*. 2018;21(2):429–440.
24. Little P, Everitt H, Williamson I, et al. Observational study of effect of patient centredness and positive approach on outcomes of general practice consultations. *BMJ*. 2001;323(7318):908–911.
25. Courson R, Goldenberg M, Adams KG, et al. Inter-association consensus statement on best practices for sports medicine management for secondary schools and colleges. *J Athl Train*. 2014;49(1):128–137.
26. Berghout M, van Exel J, Leensvaart L, Cramm JM. Healthcare professionals' views on patient-centered care in hospitals. *BMC Health Serv Res*. 2015;15:385.
27. Kroshus E, Baugh CM, Daneshvar DH, Stamm JM, Laursen RM, Austin SB. Pressure on sports medicine clinicians to prematurely return collegiate athletes to play after concussion. *J Athl Train*. 2015;50(9):944–951.
28. Stovitz SD, Satin DJ. Professionalism and the ethics of the sideline physician. *Curr Sports Med Rep*. 2006;5(3):120–124.
29. Preventing catastrophic injury and death in collegiate athletes. NCAA Sport Science Institute Web site. <http://www.ncaa.org/sport-science-institute/preventing-catastrophic-injury-and-death-collegiate-athletes>. Accessed October 8, 2020.
30. Partridge B. Dazed and confused: sports medicine, conflicts of interest, and concussion management. *J Bioeth Inq*. 2014;11(1):65–74.

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