

# Social Determinants of Health: Considerations for Athletic Health Care

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Health disparities are prevalent concerns in the United States and a frequent topic of conversation in the public health realm. Causes of health disparities include social inequities and social determinants of health. Although social determinants of health have been suggested to contribute more to individual and population health than the health care provided, this concept in athletic health care has received little attention. Therefore, the purpose of our article was to describe social determinants of health, present examples of social determinants, and discuss

actionable steps for the athletic training profession to become more culturally proficient. By increasing the awareness of and acknowledging social determinants of health, athletic trainers will be positioned to improve patient outcomes more readily and contribute to ongoing conversations at the policy level of health care.

**Key Words:** health disparity, social inequalities, social factors, patient outcomes

## Key Points

- Social determinants of health are the environments where people work, live, and grow and the surrounding forces that influence their lives. They are relevant to athletic health care because social determinants of health affect patients and their health outcomes.
- A first step in addressing social determinants of health is learning about them to recognize and understand their effects on the lives of patients.
- Athletic trainers have the potential to reduce the influence of social determinants of health on patients through awareness of their effects on health outcomes and efforts to intervene when appropriate.
- Increasing both research efforts on the role of social determinants of health in athletic health care and our understanding of health policy drivers of the social determinants of health is important in equipping athletic trainers with the tools necessary to generate interventions to improve patient outcomes.

For almost a decade, health care practices have sought to provide safe, timely, efficient, effective, equitable, and patient-centered (STEEEP) care for all patients.<sup>1</sup> Patient care that aligns with STEEEP supports the Institute for Healthcare Improvement's "Triple Aim" initiative, which is designed to improve patient experiences, promote population health, and lessen health care costs.<sup>1,2</sup> *Patient-centered care*, or care that considers patient values, experiences, and preferences,<sup>1</sup> has been accepted as the preferred care delivery model for patients. Despite the Institute for Healthcare Improvement's "Triple Aim" initiative, consistent, high-quality health care in the United States continues to be lacking in a fair and accessible way,<sup>1,3–5</sup> and health inequities across populations persist.<sup>1,6</sup> Although terms such as *health inequity*, *inequality*, and *disparity* are often misused interchangeably, it is important to understand the key defining components of each of these concepts to accurately advance the conversation of STEEEP. The Table includes these important definitions.

Although health inequities and disparities across populations have been a consistent reality in the United States for years, the coronavirus pandemic accentuated these differences and provides a current example of their

significant effects on underrepresented populations. Racial and ethnic minorities, as defined by the Federal Government's Office of Management and Budget, contracted COVID-19 at higher rates than White Americans.<sup>7–9</sup> For the purposes of this article, we identified those groups as historically underrepresented. When compared with Whites, Black Americans had a 3.6 times higher mortality rate, while American Indian or Alaska Native persons, Latinos, and Pacific Islanders had rates 3.0 times higher.<sup>10</sup> Exposure and infection rates are also higher among historically underrepresented groups. Although they represented 13% of the US population, Black Americans accounted for 20% of reported COVID-19 cases in fall 2020.<sup>11</sup> Authors<sup>7,8</sup> suggested that historically underrepresented groups that contracted COVID-19 were also at a higher risk of being uninsured and unemployed and often live in areas with more air pollution and in crowded households. Additionally, employment contributed to the disproportionate numbers in that only 1 in 5 Black Americans had a job that allowed him or her to work from home,<sup>12</sup> increasing the risk of exposure to the virus. Occupations deemed essential are disproportionately filled by Black versus White individuals, which also corresponds

**Table. Key Definitions**

Term	Definition
Cultural proficiency	Authentic understanding and management of the dynamics of differences through cultural self-awareness, effects on other cultures, value and appreciation for differences, and active engagement in cultures beyond your own understanding to promote health equity <sup>13,14</sup>
Health disparity	A particular type of health difference that is closely linked with social, economic, or environmental disadvantage or all of these. Health disparities adversely affect groups of people who have systematically experienced greater obstacles to health based on their racial or ethnic group; religion; socioeconomic status; gender; age; mental health; cognitive, sensory, or physical disability; sexual orientation or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion <sup>15</sup>
Health equity	The absence of unfair and avoidable or remediable differences in health among social groups <sup>16</sup>
Health inequality	Systematic differences in the opportunities groups have to achieve optimal health, leading to unfair and avoidable differences in health outcomes <sup>17</sup>
Health inequities	Systematic differences in the health status of different population groups that have great economic and social burdens <sup>16,18,19</sup>
Social determinants of health	The conditions in which people are born, grow, live, work, and age <sup>16</sup> ; the unequal allocation of power and resources—including goods, services, and societal attention—which manifests in unequal social, economic, and environmental conditions <sup>20</sup>
Structural inequality	Intrapersonal, interpersonal, institutional, and systemic mechanisms that organize the distribution of power and resources differentially across lines of race, gender, class, sexual orientation, gender expression, and other dimensions of individual and group identity <sup>20</sup>

to the finding of higher COVID-19 mortality among Black people.<sup>21</sup> The overrepresentation of people of color employed as essential and expendable workers makes it more likely that they will be employed without the support of protective equipment and mandated protocols.<sup>22</sup> These data from the 2020 coronavirus pandemic highlight the significant negative effect that health inequities and disparities have on historically underrepresented populations.

Two prominent explanations for health care disparities of underserved populations are structural inequalities and social determinants of health. Although these concepts are connected, they have key differences. *Structural inequalities* are systemic disadvantages, such as racism, sexism, and classism, experienced by certain social groups.<sup>20</sup> One structural inequality that cannot be ignored and perhaps should be considered a social determinant of health itself is race. Race is a social construct, as no biological evidence of racial differences exists. Conley<sup>23</sup> noted health disparities among populations of color, which, when compared with their white counterparts, were more likely to be poor. The disparate conditions contrived by low socioeconomic status relate directly to systemic structural racism in employment, housing, transportation, social environment, physical environment, and public safety.<sup>20,24</sup> Additionally, distrust in medicine among populations of color also contributes to the quality of care received. Countless examples such as the Tuskegee experiment have helped to frame the distrust narrative. Unconscious bias is a characteristic in every human being, and health care providers are not spared this psychosocial response. Treatment decisions are influenced by unconscious bias in health care providers, again making race a topic not to be ignored.<sup>25</sup> Although other structural inequalities exist, race needs to be further acknowledged and highlighted because people of color are more likely to be negatively affected by social determinants of health and suffer from health inequalities.<sup>16,23,25</sup>

Whereas structural inequalities reflect systemic disadvantage, *social determinants of health* are defined as the living, school, and work environments of people and the surrounding forces or circumstances that influence daily

living conditions.<sup>20,26</sup> Examples include health systems and services, education, housing, and social environments. The interconnectedness among structural inequalities and social determinants of health influences experiences in patient-provider settings, and these connections can closely relate to the care received. However, social determinants of health affect people's lives more profoundly<sup>27</sup>; as such, health outcomes are less influenced by the care provided.<sup>5,20,28,29</sup> Keyes and Galea<sup>30</sup> described the effect of social determinants of health using the metaphor of a fishbowl: if the bowl is cracked, dirty, or leaking water, the fish will never be able to reach optimal health due to the conditions in which it lives. Similarly, patients who live in unsafe environments, lack access to transportation, or do not have social support will likely have worse health outcomes than those in safer environments.

A greater understanding of health conditions from a patient-centered perspective requires the recognition of underlying causes, including structural inequalities and social determinants of health,<sup>17,31,32</sup> because of their effects on health and well-being. As a result, these conditions have received increased focus in athletic health care. Although these concepts are strongly interconnected, they are complex, and understanding them individually is important. Therefore, this Current Clinical Concepts article focuses on social determinants of health. Our purpose was to highlight the concept of social determinants of health, present examples of social determinants globally and specific to athletic health care, and discuss actionable steps for the athletic training profession to become more culturally proficient.

## SOCIAL DETERMINANTS OF HEALTH

Social determinants of health stem from the unequal allocation of power and resources that affect quality-of-life outcomes and health functioning and risk. These power differentials also exist within the patient-provider relationship. Social determinants account for 50% of the modifiable factors contributing to negative health outcomes, whereas health care received contributes approximately 10% to 15%.<sup>28,29,33</sup> For example, educational levels have repeated-

ly been found to contribute to the likelihood of early death: those with higher levels of education have early death rates 2.5 times lower than those with the lowest educational attainment.<sup>34</sup> Hundreds of thousands of adult deaths in the United States in 2000 were attributed to social determinants such as poor education, low-level social support, individual-level poverty, and income inequality.<sup>35</sup> When collective efforts are focused on social determinants, the health of individuals and communities can be improved.<sup>20</sup> States that spend more on social services than health care have lower rates of asthma, cancer, obesity, mental health disorders, and type 2 diabetes in adult populations.<sup>27</sup> These data suggest that addressing social determinants improves health outcomes. Failure to evaluate social determinants and lack of awareness of their importance in health care interactions are missed opportunities to provide culturally proficient, comprehensive patient-centered care and promote patient health and well-being. An example would be an increased risk of injury for an athlete who battles food insecurities. The athletic trainer (AT) could be a life-altering force by advocating for access to healthy snacks and meal programs beyond the breakfast and lunch programs offered in most public K–12 schools. These athletes often compete after school hours and, in many cases, return home late into the evening. Drawing attention to social determinants starts with education about the concept and their influence on patient outcomes.

Social determinants of health include but are not limited to health systems and services, transportation, education, employment, income and wealth, housing, public safety, physical environment, and social environment (Figure).<sup>20</sup> The interworkings of social determinants of health are complex and can positively and negatively influence health outcomes. The negative effects have historically outweighed the positive; therefore, the shortcomings will be further addressed. Social determinants of health contribute to health disparities among populations and prevent the achievement of optimal health outcomes in individuals and populations.<sup>36</sup> Social determinants of health influence patients every day and are often overlooked contributors to health. The complexity of social determinants of health increases when more than 1 determinant (eg, education and employment) is present.<sup>20</sup> Athletic trainers need to be aware of social determinants because they influence patient health outcomes. The following sections describe the primary social determinants of health, as defined by the National Academies of Sciences, Engineering, and Medicine,<sup>20</sup> and provide examples from an athletic health care perspective.

## Health Systems and Services

*Health systems and services* is a broad category of factors that are defined as the access or lack of access to effective and affordable care.<sup>20</sup> Health systems and services should strive for culturally proficient health care, which denotes that health care will also be equitable. Health systems and services can be considered from a variety of perspectives, including how to navigate the health care system as well as a person's capacity to obtain, process, and understand health information.<sup>20</sup> The breadth of the category highlights the many factors that contribute to access to health care. Health care access can depend on health insurance, and employers are often the providers of that insurance in the

United States. *Healthy People 2020*<sup>15</sup> reported that 1 in 5 Americans under age 65 years lacked health insurance, and 1 in 4 lacked a primary care physician, which limits health care access. Although lack of access can negatively influence health, the issue is not as simple as having or not having health insurance. Institutional perspectives are needed to assist in determining and addressing access as an area of improvement and a critical factor for becoming culturally proficient and reducing health disparities. Gulliford et al<sup>37</sup> defined *access to health care* using 4 dimensions: service availability, barriers to service utilization, relevance and effectiveness of access, and equity of care. When evaluating access to care in a population, considering these dimensions, responding appropriately, and asking culturally proficient questions are essential.

In athletic health care, appropriate questions related to the dimension of service availability are whether enough ATs are accessible to all secondary schools and athletes in a district; whether employment models for ATs are full time, part time, or per diem; and whether ATs provide services only during competitions. Currently, access to AT services across the United States is limited, despite efforts to have an AT in all secondary school settings. In 2015, Pryor et al<sup>38</sup> found that 70% of secondary schools employed an AT, but only 37% employed one on a full-time basis. An AT may be the first and only health care provider a child participating in sport has access to, which highlights the value of athletic health care in promoting the health of people and populations.

Another appropriate question related to the 4 dimensions presented by Gulliford et al<sup>37</sup> is, “What is the health literacy of my patient?” *Health literacy* is “the capacity to obtain, process, and understand the basic information needed to make appropriate health decisions.”<sup>39,40(p278)</sup> Athletic trainers can influence the health literacy of patients. Understanding the health literacy of patients is a potential opportunity to reduce this barrier to health care. Using cognitive interviewing techniques, lay terms, and associative examples can improve patient understanding and trust.<sup>41</sup> In efforts to improve patient health literacy, ATs often make appointments, navigate the insurance process, and educate patients on health topics. Athletic trainers not only provide health services that reduce the negative influence of social determinants but, in many cases, also guide patients through the health care system. Athletic trainers seeking additional information on patient health literacy should explore the World Health Organization “Healthy Literacy Toolkit,” which aims to promote understanding of patients' limitations and strengths.<sup>18</sup>

## Transportation

Transportation is often considered a physical environment social determinant. However, similar to the World Health Organization,<sup>26</sup> we discuss transportation separate from the physical environment because it is multifaceted and consists of the infrastructure and services necessary for individuals to move around their communities.<sup>42</sup> In a 2013 review,<sup>43</sup> numerous study authors reported a positive relationship between access to transportation and health care, with greater access to transportation related to better access to health care. When transportation is limited or designed inadequately, patients may be unable to attend

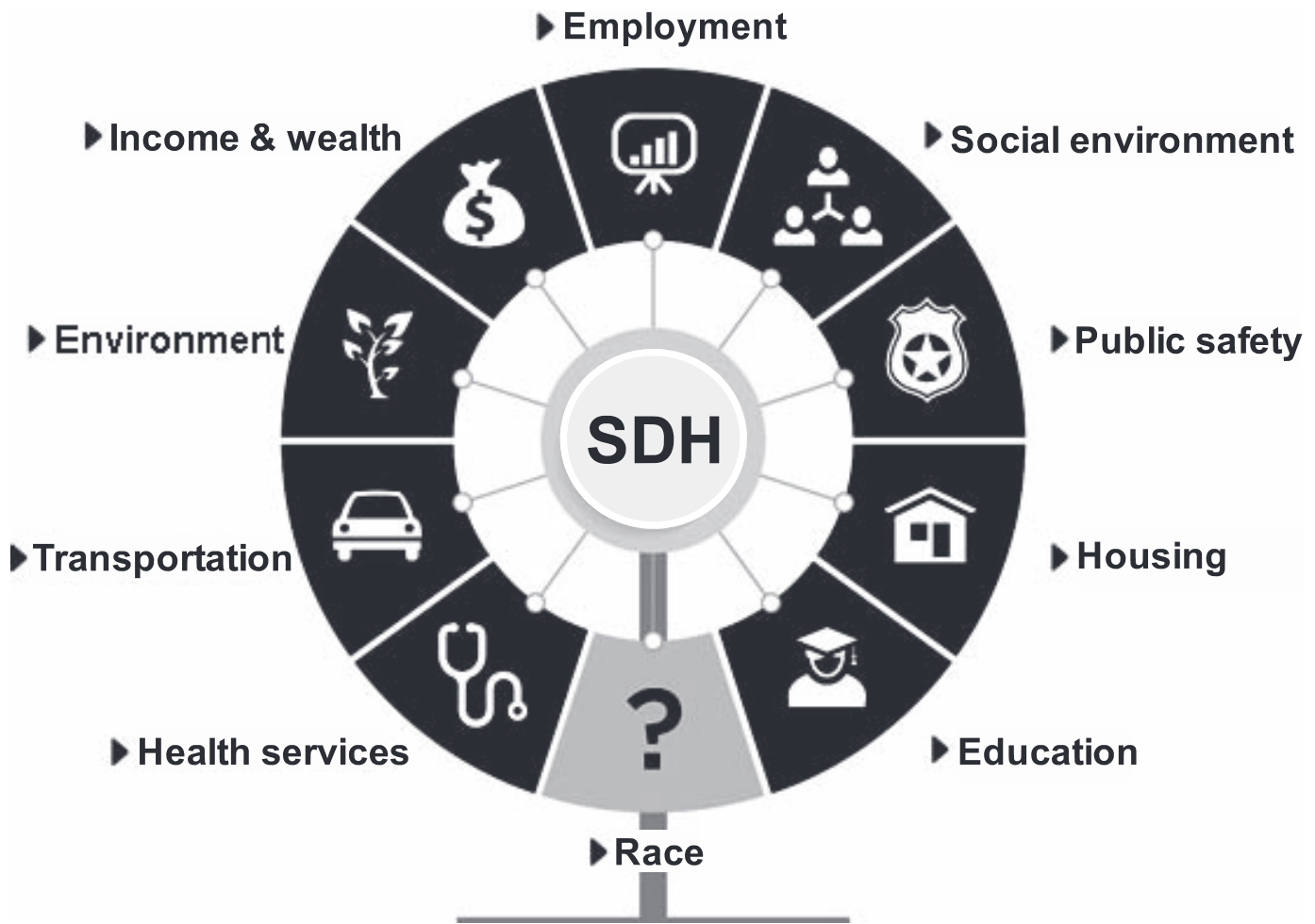


Figure. Social determinants of health.

health care appointments, thereby delaying care. Transportation can have a negative effect on health through pollution, the ability to get to and from work, and access to health care.<sup>44</sup> For example, those without access to a vehicle cited transportation as a primary factor for missing health care appointments.<sup>45,46</sup> Transportation can also have a positive effect on health through increased access to education, job opportunities, exercise, and social contact.<sup>44</sup> Access to an AT alone can reduce the negative effect of the lack of transportation on a patient's health by reducing the need to seek health care outside of a school environment. Another example, often observed in collegiate or university athletics, is how ATs have mitigated the lack of transportation for their patients by coordinating transportation to and from appointments with an offsite physician. In some instances, the AT may accompany the athlete to the appointment, reducing the lack-of-transportation barrier to the health care experience.

### Education

*Education* has been defined as “the access or lack of access to learning opportunities and literacy development for all ages.”<sup>20(p118)</sup> Education occurs in schools, the community, the workplace, and the home and leads to accumulation of knowledge.<sup>20</sup> Educational attainment

influences health in a variety of ways. Evidence from early childhood education suggests that children from lower-income communities have a drastically reduced vocabulary compared with children in higher-income communities,<sup>47</sup> which negatively affects literacy, academic achievement, and health.<sup>20,48,49</sup> Conversely, increased educational attainment leads to better employment opportunities, healthy behaviors, and longevity and a lower risk of injury.<sup>20,50,51</sup> In 2019, Franz and Cook<sup>52</sup> examined the Dominican Republic's traditional baseball academies, which focus primarily on athletic ability. Because these academies maximized the athletes' ability to earn a major league contract, 97% of players lacked the education to pursue a different career and often ended up in poverty.<sup>53–55</sup> A community-based research project was launched to determine whether an increased emphasis on academic success could change the outcomes for these athletes.<sup>52</sup> Focusing on academic success presented an alternative to homelessness, promoted educational opportunities, and stimulated equity for players and their communities.<sup>52</sup> In the United States, many athletes attend colleges and universities to play sports and desire to play professionally, yet only a small percentage of the population makes it to professional sports.<sup>56</sup> In a 2004 review,<sup>57</sup> authors examined barriers to African American athletes' persistence in intercollegiate athletics and learned that, despite being academically capable, once the athletes'

sport eligibility ended, some left the institution and did not earn their degree. Efforts to overcome these barriers have been put into place to improve opportunities in education and promote overall well-being.

In athletic health care, education cannot be ignored. For example, parental educational attainment influences children's involvement in sports. Parents reporting higher levels of education were more likely to have children who participated in sports year-round and specialized in 1 sport.<sup>58</sup>

The negative effects of educational attainment on health may be observed when a student-athlete is put on academic probation because of poor grades. Perhaps the grades slipped because the student-athlete needed to support the family with a job or by caring for younger siblings while maintaining the commitment to the team. In that scenario, the student-athlete may feel increased pressure to do well in school or lose his or her role on the team. When home life, school, and sport interact, conflicts can take an immediate mental and physical toll on the student-athlete. The longer-term effect of poor grades in high school and the intersecting pressures of home life, school, and sport may limit collegiate options and job opportunities later in life.

An example of a positive effect of educational attainment is the student-athlete who graduates with honors and is awarded a scholarship for excellent performance in the classroom, which subsequently expands future education and job opportunities. Thus, whether a person achieves a high level of educational attainment may lead to long-term positive or negative health outcomes.

## Employment

Employment, or lack thereof, is another social determinant strongly connected with others and influences one's health.<sup>20</sup> Whether related to housing, health care services, or education, employment can drive these other social determinants because it is often the primary source of income and health insurance for adults in the United States.<sup>20</sup> As strong as the association is between employment and health insurance, researchers<sup>59</sup> have also found strong associations between the type of insurance provided through employment and individuals' physical activity levels. Specifically, children with government or no insurance participate in less physical activity than children with private health insurance.<sup>59</sup>

Employment affects health outcomes through use of workplace resources and opportunities (eg, health education or exercise classes, vending machines or cafeterias), psychosocial burdens, and the physical environment of the workspace.<sup>20,60,61</sup> In athletic health care, employment may contribute to health in a variety of ways. For example, an athlete working a job to support a family may need to do so after school hours and practice sessions, leaving less time for sleep, studying, and social activities. Less sleep and less time for studying and social activities can negatively influence academic performance<sup>62</sup> and ultimately health and well-being. Parental employment is another consideration for minors. Parental employment may positively influence an athlete's ability to participate in sport, but it may also restrict participation if the family has barriers related to the costs of play,<sup>58</sup> access to health care through insurance, or work-related transportation challeng-

es. Whether in reference to the athlete or parent, employment can weigh heavily on our patients, especially in terms of their ability to engage in sport and access health care services when needed.

## Income and Wealth

Income primarily results from employment, and employment drives income inequalities.<sup>42</sup> Income fluctuates throughout one's lifespan, but wealth accumulates over time and can be measured by the assets and debts that provide a snapshot of personal finances and economical resources.<sup>20</sup> Income and wealth affect health in many ways. Primarily, they are a safeguard for health care expenses and increase the ability to seek preventive health care and better housing and education, which are important for health.<sup>20</sup> Researchers<sup>63-65</sup> have indicated that those with higher incomes experience less illness and disease and live longer, healthier lives than those with lower incomes. Children of lower-income families are more susceptible to obesity, asthma, digestive and heart conditions, elevated blood lead levels, and hearing problems.<sup>63,66,67</sup>

Generational wealth has been the impetus to access to health care in the United States. Wealth is the dominant source of disparities in the United States for people of color.<sup>68</sup> United States history has been rich with policies subverting constitutional rights, such as life, liberty, and the pursuit of happiness, for historically underrepresented groups. The most egregious of these policies were racially motivated and positioned people of color at the bottom of a wealth gap that has increased over the last 400 years, perpetuating second-class citizenship beyond slavery that kept Black and Brown people from the benefits of generational wealth.<sup>68</sup> Though many poor White people suffer from the economic divide, a more disparate relationship between access to health and poor health outcomes exists for populations of color.

In addition, income and wealth often dictate children's opportunities to participate in sports,<sup>58,69</sup> potentially depriving them of the health benefits and access to health care sports provide. In one study,<sup>70</sup> secondary schools in Wisconsin that did not employ an AT were more likely to be in counties with lower median household incomes and have students who were eligible for a free or reduced-cost lunch. Schools in California reported similar results, in addition to having almost 30% of athletes in secondary schools participating in sports at a school without an AT.<sup>71</sup> These findings suggest a link between lower income areas and access to athletic health care. When treating patients, including minors, ATs should be aware of the effect of income and wealth on health. For example, if a high school freshman track athlete experiences respiratory distress but lacks a history of asthma on the preparticipation physical examination, the AT should consider that the health condition may be undiagnosed because the family cannot afford regular visits to a doctor. Athletic trainers working with athletes from low-income areas may benefit from the awareness that they may be one of the most frequent or the only health care provider(s) accessed by these athletes. Athletic trainers can guide patients to school-based or free community health centers and serve as advocates for these services if none exist.<sup>72</sup> Continued

efforts are necessary to proactively address the unmet health needs and services of this community.

## Housing

As a social determinant, *housing* accounts for the availability, density, diversity, and segregation within a neighborhood and is the infrastructure in which one lives.<sup>20,26</sup> Health effects related to housing are compounded by other social determinants, such as income and the physical environment. Quality and safety, stability, affordability, and neighborhood are 4 pathways that describe the connection between housing and health,<sup>73–75</sup> and each affects the ability of residents to make healthy choices. Environmental factors in the home, such as exposure to lead, water leaks, or pests, are safety concerns and have been associated with the onset of asthma.<sup>73,74,76</sup> In 2017, 37.8 million families spent 30% or more of their income on housing, affecting the ability to purchase healthy foods, pay for prescription medication, and cover other essential expenses.<sup>73,77</sup> The US Department of Housing and Urban Development considers families who spend 30% of their income on housing to be cost burdened.<sup>73,77</sup> Conversely, those with more affordable housing may be able to use up to 77% of their income for education, health care costs, and food.<sup>78</sup> Investigators<sup>79,80</sup> have suggested that people with housing insecurity or those living in unstable housing environments may be less likely to seek preventive health care and more likely to access emergency services, delay the filling of prescriptions, and not adhere to treatment plans. As such, people in unstable living situations tend to have higher health care costs and poorer health outcomes.

Because the physical conditions of homes, the environment of neighborhoods, and affordability of housing affect health, ATs should think beyond patient-clinician interactions and consider the homes patients return to at the end of the day. A survey<sup>81</sup> of more than 3000 student-athletes indicated that 14% of National Collegiate Athletic Association Division I athletes experienced homelessness, and this rate was even higher for student-athletes in Division II and at 2-year colleges. Even when ATs provide an optimal healing environment, if patients return to housing environments that do not promote health, optimal health outcomes may be unattainable. Given the reality of athlete homelessness, it may be helpful for ATs to be prepared with a list of local community resources for athletes in need.

## Public Safety

Public safety, or the lack thereof, affects individual and community health. Exposure to violence, such as hate crimes, child abuse, homicides, or suicides, increases the risk of obesity, injury, poor mental health, and early death.<sup>20,82–85</sup> Children who live in unsafe communities and are witnesses to or victims of violence may be more likely to report poor health<sup>86</sup> and decreased academic achievement<sup>87</sup> than children in safer communities. Further, the stress of living in hazardous environments tends to decrease the physical activity of residents in that community and compromise mental health and well-being.<sup>88–90</sup> The safer the neighborhood in which one resides, the greater the likelihood people will be physically active and take advantage of parks and green space. Athletes who live in

unsafe communities may suffer academically, live in fear, and lack positive role models.<sup>87,90</sup>

## Physical Environment

The *physical environment* represents the natural and built environments that people occupy. Housing; transportation systems; access to food and parks; climate change; and the air, water, and soil quality of the environment are examples of the physical environment.<sup>20,42</sup> The physical environment negatively influences health through pollution, lead exposure, unsafe transportation, or water contamination and may increase the risks for birth defects, cancer, and respiratory conditions.<sup>91,92</sup> Access to food sources, such as grocery stores, is important for making healthy decisions about diet. Consuming healthy foods consisting of whole grains, fruits, and vegetables and limiting sodium and sugar intake reduces illness and disease.<sup>93</sup> When healthy food options are limited, too expensive, or nonexistent, individual and population health declines.<sup>20</sup> For example, a school located in a community where small convenience stores outnumber larger grocery stores will have more unhealthy food options. Green space and parks are features of the physical environment associated with improved mental health, reduced mortality, and increased physical activity.<sup>20,94–96</sup> Ensuring that sports fields are safe for play is also crucial for injury prevention. In athletic health care, considering the physical environments in which athletes live and play is necessary to ensure that these spaces are safe and resources are available in order to prevent injury and illness.

## Social Environment

The *social environment* includes aspects of an individual's social life, such as relationships, culture, neighborhood cohesion, and social norms, and is often measured in relation to mental health.<sup>20</sup> In 2006, McNeill et al<sup>97</sup> described the most common ways in which the social environment affects health and well-being. One avenue involves community social norms, which facilitate (eg, participation in physical activity) or prevent (eg, drug use) healthy habits forming.<sup>97</sup> Limitations in the physical environment, such as a lack of parks or green space, can restrict social interactions and networks in a community, eventually affecting health-related behaviors.<sup>20</sup> Another avenue is through social cohesion and social capital within the community.<sup>97</sup> Communities with more social capital and supportive neighbors positively affect health by reducing crime, increasing the sense of safety, and providing social support.<sup>97</sup> Along with social norms, the cultural environment also affects health. In athletic health care, sport teams tend to have their own culture. For instance, sports that uphold a certain body image, such as gymnastics, wrestling, track, and dance, were associated with higher incidences of anorexia and bulimia.<sup>98–101</sup> Further, ATs play a crucial role in providing social support to their patients. Clement et al<sup>102</sup> studied injured athletes' perceptions of social support from peers, coaches, and ATs and found that social support from ATs had a significant effect on overall health and well-being. Therefore, building positive, supportive relationships with patients may help ATs promote health in their patients.

## Relationships Among the Social Determinants

Collectively, the social determinants of health are conditions that affect patients and contribute to their immediate and long-term health outcomes. Although we have described the social determinants individually, they are often interrelated, increasing the complexity of their effects on health outcomes.<sup>20,103</sup> Further, structural inequalities related to race and poverty can compound the negative effects of social determinants of health. A first step is for ATs to acknowledge that social determinants may be contributing to their patients' outcomes and work to better understand the complexity of their interactions in order to provide culturally proficient support for each athlete.

## A CALL TO ACTION FOR THE ATHLETIC TRAINING PROFESSION

Although ATs may already navigate social determinants of health in daily practice, historically, little focus has been paid to social determinants in athletic health care, such as an emphasis on formal education and training or in clinical practice. Athletic trainers are uniquely positioned to improve the health of their patients, especially when social determinants negatively affect health. With educational and research efforts focused on social determinants of health, the athletic training profession will be well positioned to improve the health of patients and populations and to be active contributors to conversations on public health. Our primary goal as health care professionals should always be to improve patient outcomes, and by increasing knowledge about social determinants of health, a more purposeful effort toward addressing the factors that most affect patients' lives is possible. Although it may be unrealistic to influence all social determinants of health, the simple act of observing patients with social determinants in mind may provide opportunities for ATs to identify and create solutions that have lasting effects on patient and, ultimately, population health.<sup>104</sup>

A significant change and potential motivator for extending educational efforts on social determinants of health in athletic health care is the updated accreditation standards. The Commission on Accreditation of Athletic Training Education recently updated its "2020 Standards for the Accreditation of Professional Athletic Training Programs"<sup>19</sup> to include social determinants of health and ensure that future generations of ATs understand their effect on patients. In the Curricular Content section, 2 accreditation standards provide explicit references to social determinants of health. Incorporating the social determinants of health into professional education is a natural fit for athletic health care. Athletic trainers already provide prevention, nutrition, and counseling services to student-athletes; these services address several social determinants of health (ie, education, social support, access to health care).<sup>72</sup> However, more intentional incorporation in educational curricula, including clinical experiences, will increase awareness and the ability to identify social determinants during patient interactions. A recent educational technique<sup>105</sup> published in the *Athletic Training Education Journal* detailed 1 approach to integrating these concepts into educational programs. With more purposeful education on the social determinants of health, ATs' ability to influence patient outcomes will be enhanced because

they will understand that outcomes depend on more than the care provided.<sup>105</sup>

For practicing ATs, intentional continuing education opportunities that help clinicians embed the concepts of social determinants of health into their practice are needed. Authors<sup>106</sup> of a study of strategies to enhance evidence-based practice in athletic training identified several necessary components of a multimodal approach to continuing education, including additional resources, focused workshops, peer discussion, processed information, and continual exposure to content. Many of these methods can be used to promote the concepts of social determinants of health in clinical practice. Shared examples, case studies,<sup>106</sup> or patient simulations that highlight specific social determinants may help illustrate the effect of social determinants on people and populations. These methods can explore a particular social determinant and suggest mitigation strategies to support positive health outcomes.

In addition to a multimodal educational approach, ATs need to participate in research examining social determinants of health in athletic health care that align with the Athletic Training Research Agenda.<sup>107</sup> Although studying social determinants of health can be complicated by the complex interactions of individual social determinants, Andermann et al<sup>108</sup> suggested necessary steps to begin exploration. A first step is understanding how social determinants influence patient health.<sup>108</sup> From there, efforts to identify solutions and strategies to overcome the negative effects are needed, which speaks to the need for implementation and evaluation research.<sup>108</sup> Future investigators should assess how mitigating the negative influence of social determinants can promote better health over the lifespan. Better understanding of ATs' knowledge of and perceptions about the concept of social determinants of health would be another step forward. Ensuring that the awareness and evaluation of social determinants of health become part of routine practice points to the need for research into how best to support ATs in learning about and integrating these concepts into practice.

The events of 2020, namely, the coronavirus pandemic, accentuated inequities and health disparities in the United States. Although the coronavirus pandemic and resultant deaths are just 2 examples, both can be tied to structural inequalities and social determinants of health. If unacknowledged, social determinants of health limit one's ability to achieve optimal health. Social determinants of health have been investigated in the broader health care community, yet their consideration in athletic health care has been less direct. Therefore, the athletic training profession would benefit from educating members and supporting researchers who investigate how social determinants of health affect patients. Continued efforts to advance the profession as it relates to social determinants of health are important to ensure that ATs are dedicated to considering all factors that affect patient health outcomes and can increase their voices in conversations with the greater health care community.

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