ATHLETIC TRAINERS' PERSPECTIVES ON HEALTH CARE ACCESS BARRIERS OF INJURED/ILL ADOLESCENT ATHLETES

THESIS

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TABLE OF CONTENTS

Page

LIST OF TABLES

Table **Page**

LIST OF FIGURES

Figure **Page**

LIST OF DOCUMENTS

Document **Page**

CHAPTER I

INTRODUCTION

Introduction

Over the last few decades, participation in high school sports has increased dramatically and will likely continue to follow this trend.[12, 13, 20] Sport participation is often encouraged to promote physical activity in the younger population due to significant increases in childhood obesity over the past decade.[15] As more children partake in sports, there is a potential risk for sport-related injuries or conditions to occur. Some sports have greater risks for injury such as football or lacrosse, while others like tennis or swimming have lower risks, but participation in any sport has some risk.

Due to the potential risk, athletes should and need to have access to a health care provider and some form of medical coverage. School nurses and athletic trainers (ATs) are medical health professionals who serve to promote general health and well-being of the student population, but vary in specific duties. A school nurse, according to the National Association of School Nurses, "facilitates positive student responses to normal development; promotes health and safety including a healthy environment; intervenes with actual and potential health problems; provides case management services; and

actively collaborates with others to build student and family capacity for adaptation, self-management, self-advocacy, and learning".[16] An AT employed in the high school setting prepares athletes for practice and competition, develops and implements emergency action plans, advises on the safety of equipment, develops injury prevention and conditioning programs, implements treatment and rehabilitation programs for injured athletes, determines readiness for return-to-play, provides first response to acute and catastrophic injuries, and participates in the development and implementation of a comprehensive athletic health care system.[7] Once school hours come to an end, a school nurse is no longer available, leaving medical care solely to the AT.[5] Unfortunately, not all schools employ ATs[19] and only about 42% of high schools have access to ATs today.[5] Although ATs have a wide scope of skills, athletes may still have to seek additional care in cases of injuries that require emergency care, advanced diagnostics, surgical intervention, or medication. Once an athlete requires additional care beyond that provided by a secondary school infrastructure, the athlete and family will have to obtain services that necessitate medical costs.

Secondary schools often provide accidental insurance policies for athletes to offset the costs of advanced care, but medical coverage is limited with these plans. Athletes whose parents earn enough to be classified as middle or upper socioeconomic status tend to have private insurance, [9] which will usually cover most, if not all, of medical costs associated with injury and conditions. The families in low socioeconomic status are often uninsured or covered by Medicaid, [9] so that school sponsored insurance coverage may be the only type of insurance that they have. In 1999, 1 of 6 people living

in the United States was estimated to be uninsured.[8] Due to the declining economy, this number will likely increase substantially.

Injuries or conditions that cannot be treated by an AT employed at a high school must be referred to a physician or other source of care. Since ATs work under the supervision of a physician, the team physician would often be the first source of care outside of the school facilities. Depending on the extent of care provided by the team physician or needed by the athlete, some care may necessitate additional charges. Under these circumstances, whether an athlete was insured or uninsured, problems may arise. If the insured athlete's insurance company was not accepted by the physician's practice, the physician would or would not be able to provide the necessary care.[11] Uninsured or underinsured families often struggled with gaining access to other sources of healthcare once the AT was unable to provide appropriate care and the team physician wasn't capable of providing affordable care. For example, an AT could evaluate an athlete who injured his knee in a football game with a possible anterior cruciate ligament (ACL) sprain. In this case, further examination would be warranted by a physician who would likely prescribe additional diagnostic testing such as magnetic resonance imaging (MRI).[21] The expense of an MRI of the knee can vary between $400-$3500 depending upon the procedure.[1] Although an average insurance plan could cover most of the cost, those who are underinsured or uninsured could face problems with such an expense.[1] Even if the family found a way to pay for the testing, the physician would advise surgery in the case of a positive test; leading to even more expensive medical costs. The families who struggle with these types of cases could try to seek out other opportunities through

the community. Social networks in communities often provided information on affordable or free health care services that individuals could choose to utilize.[14]

In addition to appropriate health care coverage, several other barriers could impede families from accessing timely and appropriate care. Carrillo et al. developed a health care access barriers (HCAB) model (see figure 1) which described modifiable health care access barriers that were associated with health care disparities.[10] The model included three categories of barriers: financial, structural, and cognitive.[10] Barriers that prevented families access to care leaded to delayed care, decreased prevention, and decreased care, [10] which could lead to health care disparities.

Purpose

Since little has been documented on how adolescent athletes and their families maneuver the health care system to receive appropriate care after an athletic injury, this study was designed to understand the possible barriers and their impacts from the perspective of health care providers, specifically ATs. The ATs perspective is specifically unique because ATs are typically the health care provider who would be the first responder to assess and care for an athletic injury or condition. They also have a role in providing referrals and advanced medical care when necessary. This provides the AT with a different view from the families that struggle due to any number of barriers they may face with accessing health care. The purpose of our study was to provide a descriptive analysis of ATs perspectives on health care access barriers and their impacts of injured/ill high school athletes using the HCAB model as a framework. Since little has

been documented about the phenomenon of interest, qualitative methodology using focus groups and framework analysis were used.

Operational Definitions

1. **Usual source of care provider (USC)** is an individual's primary care physician or facility where they would normally obtain medical care.[14, 22]
2. **Health Care Access Barriers Model (HCAB)** provides an analysis of "modifiable health care access barriers that are associated with health care disparities." The model includes three categories of modifiable health care access barriers: financial, structural, and cognitive, which reinforce and affect health care access individually or in concert.[10]
3. **Health care access** refers to an individual's ability to obtain medical care when necessary without barriers preventing them.
4. **The Behavioral Model of Utilization** "analyzes the factors that are associated with patient utilization of healthcare services."[4, 17]
5. **Primary on-campus health care** is provided to students at school by the school nurse or athletic trainer if applicable.
6. **Athletic trainers** are health care professionals who collaborate with physicians to optimize activity and participation of patients and clients. Athletic training encompasses the prevention, diagnosis, and intervention of emergency, acute, and chronic medical conditions involving impairment, functional limitations, and disabilities.[6]
7. **School nurse** is "a specialized practice of professional nursing that advances the well-being, academic success, and lifelong achievement of students."[3]

8. **Financial barriers** are barriers relating to the "cost of care and insurance status."[10]
9. **Cognitive barriers** are barriers relates to the individual or family's general knowledge of health care and communication skills.[10]
10. **Structural barriers** are barriers defined by the "health care system's availability" found within or outside of health care facilities.[10]
11. **Economically disadvantaged** is defined as one who is eligible for free or reduced-priced meals under the National School Lunch and Child Nutrition Program.

Delimitations

1. This study is delimited by the recruitment of high school ATs as the primary source of information provided by a health care provider that deals with the day to day concerns of athletes with access barriers.

2. This study is delimited to ATs in the state of Texas recruited at regional conferences.

Limitations

1. This study will only examine the perspectives of the athletic trainer regarding adolescent athlete's access to healthcare.

2. Since this study uses information obtained from athletic trainers that attend regional conferences, the generalizability of the findings will be limited.

Assumptions

1. It is assumed that each participant will be honest and truthful when answering questions and providing input during the interviews/focus groups.

2. It is assumed that each participant will attend the organized interview/focus group at the assigned time.

Significance of the Study

As participation in high school sports continues to rise, the number of injuries/conditions will be on the rise as well. The CDC reports that approximately one million serious sports-related injuries occur annually to adolescents aged 10-17 years old.[2] Acute injuries are not the only concern. Athletes may have pre-existing conditions they were unaware of until exacerbated by physical activity. For example, the CDC reported an estimated 9.6 million children under the age of 18 had been diagnosed with asthma.[18] For some individuals, asthma may be a minor issue, while others if untreated or unmanaged may be life threatening.

As health care providers, it may be difficult to determine the best source of action when an athlete is in need of advanced care but is uninsured or underinsured. Federal and state assistance programs such as Medicaid are able to assist certain families who are eligible, but not all low income families meet the requirements. Until health care reform is able to help all Americans, these families who are uninsured or underinsured and don't qualify for Medicaid may struggle to receive adequate care. In addition, other barriers like those proposed by the HCAB model may be factors as well. This study examines the ATs' perspective specifically, which is important because they are typically the individual present at the initial injury and when advanced care from other health care providers is necessary. Receiving information from ATs is the key to this study because they can provide some care to the athletes, but also understand the potential problems that

may occur when additional care is necessary. Using the HCAB to identify community factors that can be affected is an important first step to modifying health care access barriers and their impacts of adolescent athletes.

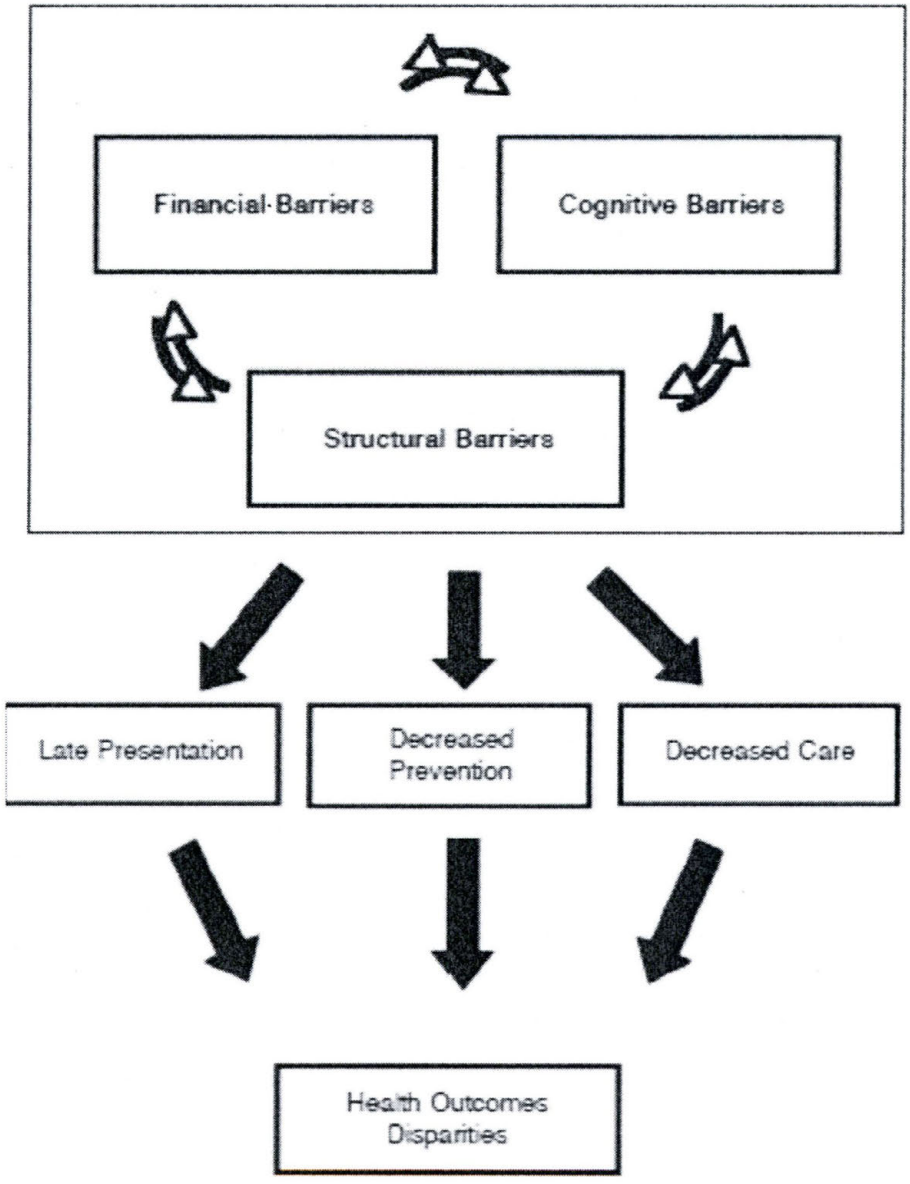

Figure 1 Health Care Access Barriers (HCAB) Model.[10]

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CHAPTER II

LITERATURE REVIEW

Introduction

Sports injuries and illnesses are prevalent in today's society. When injuries occur, medical care is often necessary for the injured athlete. Quality medical care is partly influenced by healthcare access, but access may be limited for a number of reasons. These are referred to as barriers that may impede one's ability to achieve the access to medical care. The health care access barriers model will further explain the three types of barriers individuals may face; financial, structural, or cognitive. Within this literature review we will provide the context to understand health care access barriers and will include information on injury epidemiology, health care costs associated with injury, quality assurance and healthcare access models.

Adolescent Injury Epidemiology

High school athletics have become increasingly popular in the United States, with estimates of over 7.5 million high school student athletes participating annually.[12, 13, 23] As more students continue to participate in sports, the incidence of injuries will continue to rise. In general, high school athletes sustain an estimated 2 million injuries, 500,000 doctor visits, and 300,000 hospitalizations per year.[11]

The most common diagnoses for high school sport-related injuries include fractures and dislocations, sprains and strains, open wounds, and contusions.[21]. The level and type of injury risk varies by sport. One study reporting football and basketball injury rates of high school athletes, reported that football, followed by basketball athletes were seen in the emergency department most often .[20] Contact sports such as football,[7, 21] wrestling,[7] and lacrosse pose a greater risk of injury[13] when compared to other sports with less contact. In one study examining the epidemiology of fractures among high school athletes, 10.1% of all injuries were fractures and 49.7% of those occurred during contact between athletes .[23]

Concussions are also a common injury seen in contact sports. Football has accounted for more than half all concussions in high school sports due to the high level of contact.[13, 16] Although contact sports have a higher risk of concussion, all sports in high schools have risks of concussions occurring. One study found that when boys' and girls' high school sports were compared, girls' sports had approximately twice the concussion risk .[16] When including all high school sports, there were approximately 1.6 million to 3.8 million sports-related traumatic brain injuries each year, including individuals who did not seek medical care .[15] Concussions and other related brain injuries are of serious concern and necessitate immediate medical attention.

Rare injuries are uncommon, but do occur in high school athletics. Rare injuries may include eye injuries, dental injuries, neck and cervical spine injuries, or dehydration and heat illness.[12] In a study observing the epidemiology of rare injuries and conditions, it was found that rare injuries accounted for 3.5% of all injuries during the 2005-2007 school years.[12] In sports where contact is a component of the game, preventing some of

these injuries is nearly impossible. On the contrary, sports such as basketball and soccer include moderate amounts of contact and tend to have larger proportions of player-player contact injuries associated with foul play.[13] Injuries under those circumstances can be prevented by effective refereeing and athletes following the rules of the game.

Health Care Costs Associated with Injury

Encouraging students to participate in athletics is an effective way to promote general health and well-being.[7] Due to the risk of injury involved, it is important to have adequate medical coverage if an incident does occur. Medical bills can be a burden on the health care system and on families, particularly those who are uninsured or underinsured.[7, 23] For example, when fractures are suspected, many require expensive diagnostic imaging such as x-rays, MRIs, or CT scans, or may even require surgery.[23] Rare injuries tend to be more serious and need immediate medical attention to prevent further damage or lifelong effects. Eye and dental injuries may require surgery, which tends to be very costly.[2] Eye injury treatments can range from $200-$1570 per case.[12] Dental injuries tend to be even more expensive than eye injuries, ranging from $900-$15,000 when surgical repairs are necessary.[12] In an overview of traumatic brain injuries, it was estimated that the lifetime costs of traumatic brain injury in the United States, including medical costs and lost productivity, is $60 billion annually.[15] Unfortunately, documentation of the long-term costs of everyday athletic injuries suffered by high school athletes is hard to find. Nonetheless, families with no insurance or little medical coverage will struggle to get the appropriate treatment for these injuries that require medical attention. An athlete may have detrimental effects for the rest of his or her life if not provided access to the necessary care.

The costs of healthcare worldwide have been an ongoing serious problem for individuals regardless of socioeconomic status for several decades. Every individual is at potential risk of injury and/or conditions at any time throughout their lives. When an individual suffers from injury and/or conditions, the patient may face complications or have difficulty seeking the necessary care due to the constantly increasing medical costs. These costs can significantly impact the patient alone and his or her family financially and sociologically.[24] Financially, families and the larger health care system are heavily affected by increases in costs of medical care. In a study of pediatric patients, the number of hospitalizations over 4 years did not increase, but the total hospitalization charges over the 4 years increased significantly, affecting the families and third-party payers.[24] Sociologically, the life of the injured or ill athlete and his/her family changes drastically when the impact of high medical costs takes over. Families who are uninsured and must pay out of pocket for services suffer substantially. In addition, the families with insurance coverage may have costly co-payments, which in turn also may cause a financial burden.[24] Individuals who are uninsured or do not have adequate health insurance because of financial barriers tend to also have a decreased quality of life due in part to not having a usual source of care[14, 18] which limits their potential for good physical health. Preventative care is also influenced when patients do not have access to physicians regularly, which can lead to chronic illness. A 2001 study found that uninsured individuals who had asthma or hypertension were most frequently under medicated.[3] These individuals may be unable to afford to see a physician for a refill on medication to control an existing condition and have few options when they run out of medication.

In addition to one's physical health being affected, emotional and psychological factors are affected. Sport participation is often very important to adolescents and may serve as part of their self-identity.[24] Children who suffer from a chronic condition or severe injury and do not receive adequate care may have to stop sport participation, which may lead to depression and/or other psychological ailments.[24] In general, the impact medical costs have on so many individuals makes it imperative for improvements to be made or health care access will continue to be problematic in our society.

Quality Assurance

Professor and writer, Avedis Donabedian defined quality assurance as all actions that are taken to establish, protect, promote, and improve the quality of health care.[8] Health care providers play a large role in the quality of health care and can help or hinder the distribution of care, but Donabedian also posited that other factors also affect health care quality.[8] The components of a healthcare system that can influence health care quality included structure, process, and outcome.[8] Donabedian stated that the three components create a linear relationship where structure influences process and process influences outcomes. Structure is described as the way a health care system is set up and how the people in that specific system perform and offer that quality of care.[8] For example, the form of payment method accepted at a doctor's office could have an effect on the patients they serve. Having varieties of types of payment may in turn reflect on the type or quality of care provided. The next component, process, are the activities that form health care such as treatment, prevention, patient education, etc.[8] For example, a patient may be educated by a provider on ways to improve eating habits and incorporate physical activity into their lifestyle. If the practitioner provides the patient with misleading,

inaccurate information, the patient may encounter undesirable or negative outcomes. Outcomes are the changes (desirable or undesirable) in individuals and populations that can be attributed to health care.[8] As a result of poor education, the patient may decline in their health status, which is an outcome of the process. Process and outcome are closely linked to one another since the processes provided to a patient in good quality will in turn lead to desirable outcomes. On the contrary, as previously stated, in instances where poor process is noted, the outcomes will be undesirable. The combination of structure, process, and outcomes allows one to assess all the domains of quality as a whole.

Health Care Access Models

Quality assurance also relates to individuals' abilities to obtain access to health care. The quality of health care may be assessed once the care is provided, but in many cases individuals are not able to overcome barriers preventing them from accessing health care. Barriers may be financial, structural, cognitive, or any combinations of the three.[5] A conceptual model called the health care access barriers model (HCAB) was developed to describe the measurable and modifiable health care access barriers that are associated with health care disparities. Once these barriers are recognized by the health care provider or the individual, interventions can be made to improve the specific barrier the individual is facing.

Financial barriers are generally referencing the cost of care and health insurance status .[5] Specifically, these affect the individuals and families who are either uninsured or underinsured and have difficulty accessing or maintaining the necessary health care. It has been reported that between 2000 and 2007, the percentage of children living in

families with incomes below the federal poverty level increased from 16.2% to 18%.[9] The families in lower socioeconomic status levels are often Blacks, Hispanics, and Native Americans and are more likely to be uninsured.[18] The uninsured often do not have a usual source of care when sick, no personal health care provider, have had no visits to a health care provider in the past year, and are unable to access medical care due to costs.[18, 25] Individuals unable to access these services lose the opportunity of accessing preventative services,[17] which is an important component of health care.[4] Preventative care can provide an early diagnosis of potential diseases that may reduce substantial costs in the future or even save a life.[4, 25] Unfortunately, uninsured families have difficulty finding ways to move around the health care system and often do not succeed.

Families who are unable to afford private insurance and are eligible may be covered by public government assistance such as Medicaid or the State Child Health Insurance Program (SCHIP).[6] The families covered by public health insurance may benefit even more than the private insurance holders because they tend to have lower co-payments.[6] On the other hand, a study found that those who were privately insured were significantly more satisfied than those who received Medicaid.[19] Financially, the health care system is in need of improvements for all individuals whether they have some form of insurance or not.

Structural barriers are those defined by the health care system's availability found within or outside of health care facilities.[5] These structural barriers tend to be associated with financial barriers. For example, a low income family may have difficulty accessing medical care because they don't have enough money for a car, causing them to use public transportation which may not be affordable or easily accessible. In addition to possibly

using public transportation, a study on neighborhood disadvantages revealed that access to health care can be limited due to one's specific neighborhood.[14] Low income families often reside in these disadvantaged neighborhoods where other factors become apparent such as crime or poorly maintained sidewalks. Families in these situations may not feel safe or want to go through all the trouble to access a medical facility that is not near their home. Health care providers often choose to run their businesses in more attractive areas, which impedes the access for the lower income families in these disadvantaged neighborhoods.[14]

In addition to transportation and location problems, other structural barriers may exist. Injuries or conditions requiring hospitalization can greatly affect stress on the athlete and family. One study found the average hospital length of stay to be 2.4 days for children with sports injuries.[24] This would not only affect the child from missing school, but the parent or caregiver from missing work as well. An uninsured or underinsured parent or caregiver may not be able to afford to miss this substantial amount of time away from work and it may be detrimental to the family. These structural barriers are beyond the families' control since they exist through the health care facility and may or may not be accommodating.

The last barrier discussed by Carrillo is cognitive, which relates to the individual or family's general knowledge of health care and their communication skills.[5] Just as financial and structural barriers may affect one another, cognitive barriers may be connected with the other two as well. These barriers may be related to the family's beliefs, knowledge of disease, prevention, or treatment, knowledge of insurance policy, or even a communication issue.[5]

Many problems arise in society when dealing with health insurance plans. Often people do not understand their plan and what it entails due to its complexity of words, or because they didn't take the time to thoroughly read it. In 1993, Garnick et al. created a survey to report how well Americans understood their own health coverage by asking three questions: whether the provider paid for emergency care when outside the provider's service area; whether the provider paid for an annual physical exam; and whether the provider limited the patient's choice of hospitals.[10] Overall, they found that fewer than a third of the enrollees could answer all three of the questions correctly.[10] In addition to understanding one's health insurance policy, other insurance policies such as life insurance are important as well. Unaware individuals may suffer greatly when unexpected results are received such as medical bills.

In addition to lack of knowledge regarding insurance policies, uninsured individuals specifically have been shown to have a lack of knowledge about general illness and self-care.[3] In a 2001 study, uninsured, ethnic minority individuals were compared to insured individuals on the effectiveness of managing chronic illness.[3] The uninsured were found to not understand illness, lack recognition of illness danger signs, and use home remedies instead of medical regimen.[3] For example, an uninsured patient may attempt to be thrifty with their medication and not follow the specific dosing recommendation because they are unable to afford to see the doctor when they would need to receive a refill. This is an example where a cognitive barrier (not following important prescription directions) is affected by a financial barrier (inability to afford medical treatment).[5]

In contrast to the HCAB model, Andersen et al. developed a behavioral model (see figure 2) of utilization to analyze the factors associated with patient utilization of health care services.[1] Unlike the HCAB which focuses primarily on community based health interventions, the behavioral model focuses on the individual as the unit of analysis.[1] Instead of identifying barriers in the community, the relationships among the patient, provider, and environmental factors that influence utilization are of most importance.[22] This model incorporates three population characteristics which have an effect on the environment and health behavior; predisposing characteristics, enabling resources, and need.[22] The predisposing factors include demographics, social structure, and health beliefs. These characteristics play a role in the enabling resources, which must be present for health care use to occur. Andersen defines potential access "as the presence of enabling resources."[1] Health care providers must have facilities available where people live and work in order to provide care. If these resources are not available or easily accessible, the need for care will continue to be apparent. The utilization model does not include all modifiable components, which can be deceiving. If changing components to a system to make improvements is a goal, the components must be modifiable, as they are in the HCAB model.

Conclusion

The HCAB model provides a descriptive framework for health care providers in order to determine health care access barriers. The three barriers described, financial, structural, and cognitive, can apply singly or in combination with the others. When occurring in combination, these adolescents and their families suffer substantially and lose potentially all access and use of health care. The patients' outcomes are being

affected and causing them to have overall decreased health, potentially due to stopping their sport. All barriers need to be identified in these specific individuals so that appropriate action can be taken to attempt to improve, and hopefully remove these barriers.

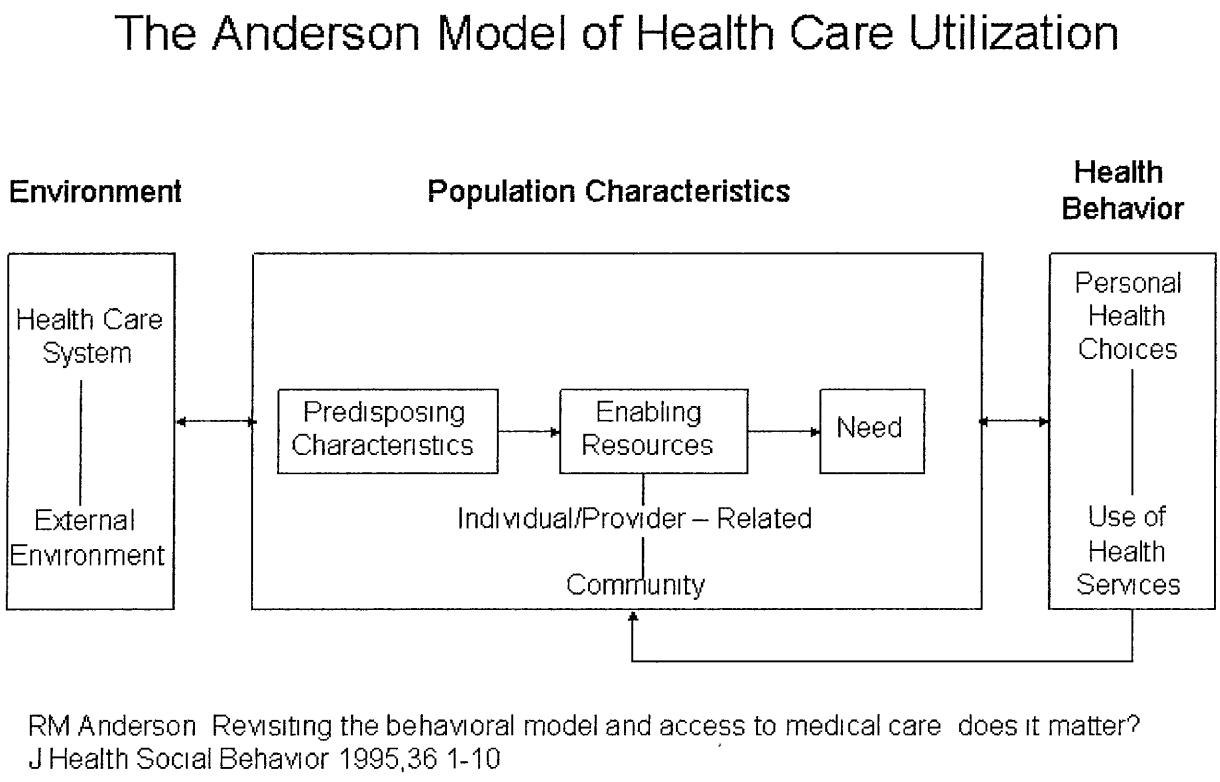

Figure 2. The Andersen Model of Health Care Utilization[1]

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CHAPTER III

METHODS

Participants

Focus group interviews were conducted with 21 state of Texas licensed and/or certified ATs (see table 1). Each participant was involved in 1 of three focus groups (focus group #1 had 6 participants and focus groups #2 and #3 each had 8 participants). Groups were selected through purposive sampling to represent the specific population in relation to the key criterion and purpose of the study.[1] Certified and/or licensed ATs were recruited in a variety of geographic areas, including the greater Houston area, central Texas, and south Texas, who currently had full-time positions employed as an AT in a middle-school or high school, and had at least 3 years of experience with administrative work in athletic training. Administrative work was described as experience with paperwork including referrals and insurance policies.

In addition, we recruited ATs employed at schools from a variety of socioeconomic statuses and with ethnically diverse populations. Eleven ATs were employed at schools where more than 50% of the students were economically disadvantaged, 8 ATs where between 25-50% of the students were economically

disadvantaged, and 3 ATs where under 25% of the students were economically disadvantaged. Nine ATs were employed at schools where over 50% of the students were white and 7 ATs were employed at schools where over 50% of the students were Hispanic. All ATs were employed at schools with less than 25% African American students, except in 3 cases. Eighteen ATs were employed at schools with less than 10% of "other" ethnicities, while 4 ATs were at schools with "other" ethnicities slightly greater than 10%. American Indian or Alaskan Native or Asian or Pacific Islanders were classified as "other" in the table.[2]

Focus group participants were recruited in one of two ways. The first focus group was recruited from high schools in the central and south Texas areas through e-mails and phone calls through contact information obtained from school district websites. A variety of high school ATs were targeted through emails and phone calls based on school size and socioeconomic status. The second and third focus groups were recruited at a regional athletic training conference in the greater Houston area because the individuals at these conferences represented a diverse population of ATs in the high school setting. Each potential participant that expressed interest had a follow-up conversation with the principal investigator to ensure that they met the sampling criteria (see document 1). After the model was created from the three focus groups, a decision tree was used to create a member checks group that included selected members from the original three focus groups. The decision tree was created with themes that emerged from the first three focus groups so that a diverse set of perspectives were represented in the member checks group. All of the participants consented to participate in the study and were informed of the expectations for the interview prior to commencing the study. Participants were

informed that they were not required to discuss anything that made them feel uncomfortable and that they could terminate the interview at any time without any negative consequences. All participants gave verbal consent to have the interviews audio-taped.

Data Collection

Qualitative methodology was used since little has been documented about the phenomenon of interest. Semi-structured focus group interviews were used to identify the ATs' perspectives and personal experiences with adolescent athletes with health care access barriers. This technique allowed for more questions and experiences to be shared by the different ATs. The interview guide included a list of open-ended questions using the HCAB model to promote discussion about the role of financial, structural and cognitive barriers in adolescent athletes. Further conversation was stimulated from the interview guide introducing new relevant ideas (see document 2). Probes were incorporated when relevant to encourage ideas that may not have been considered.

Interviews began with personal introductions from each participant, including their name and a brief description of the size and location of their school. Following introductions, the interviewer conducted a 5 minute reflective activity where participants were asked to jot down experiences they had with their athletes and barriers. A copy of the HCAB model was presented to each participant, which introduced the potential barriers. Then, the discussion was centered on each individual barrier separately as the ATs shared their specific experiences.

Group interviews ranged in length from 47 to 76 minutes (56.6 ± 16.7) and all interviews were led by the same individual (AH). Each of the three focus group interviews were conducted face-to-face in a confidential location and each was audio-taped to be transcribed. The member checks group included 5 participants from one of the three focus groups. Due to multiple scheduling conflicts with the ATs, the principal investigator chose to complete individual phone calls with 3 participants and a conference call with 2 participants due to their schedule compatibility. Phone call interviews ranged in length from 15 to 40 minutes (27.6 ± 11.1).

Data Analysis

All interviews were transcribed verbatim and checked for accuracy and all personal identifiers were removed to maintain confidentiality. Two researchers (AH and LV) separately analyzed the interviews using a framework analysis and then met to discuss the findings and refine the model. A framework analysis was used, including five key stages[3] to develop themes from the research questions and insight obtained from the participants. All transcriptions were read thoroughly by the researchers to become familiar with all the content. This familiarization stage assisted in compiling the interview as a whole, before breaking it into thematic categories. A thematic framework was then identified by writing notes in the margins of the texts to develop concepts and ideas derived from the interview. The third stage, indexing, involved highlighting and sorting out quotes made by participants that were similar and different. Quotes were compiled to form potential new and existing thematic categories through the process of charting. Some quotes and ideas were eliminated in the data reduction stage when

similarities were found and merging was achieved, or if ideas were not relevant to the purpose of the study.[3]

Trustworthiness

Trustworthiness was established using member checks and analyst triangulation. The member checks group served as an opportunity to check the model developed by the first three focus groups for accuracy and introduced a new modified model that was developed. The modified model that was developed was clarified based on information received from the member checks phone call interviews. Analyst triangulation, another method to establish trustworthiness, was completed between two authors (AH, LV) separately using the framework analysis. The two analysts then came together and discussed the themes that emerged and came to a consensus regarding the model. Analyst triangulation also reduced the potential bias that would have come from one person's analysis and provided ways to assess more directly the reliability and validity of the data that were obtained.[4]

Table 1 Participants and School Demographics.

	Name	Gender	Years of AT Experience	School Size	Economically Disadvantaged‡	Ethnicity Demographics†
FOCUS GROUP 1	Bill	Male	27	5A	69%	AA= 5% HIS= 70% WH= 23% O= 1%
	Joe*	Male	7	4A	48.8%	AA= 4% HIS= 58% WH= 37% O= 1%
	Peter	Male	3	3A	31.6%	AA= 3% HIS= 31% WH= 65% O= 2%
	Sharon	Female	6	5A	50.3%	AA= 8% HIS= 64% WH= 23% O= 4%
	Melissa	Female	3	5A	26.2%	AA= 13% HIS= 32% WH= 51% O= 3%
	Linda	Female	3	5A	42.8%	AA= 9% HIS= 49% WH= 37% O= 5%
FOCUS GROUP 2	Warren	Male	23	5A	43.2%	AA= 17% HIS= 39% WH= 36% O= 9%
	Steven	Male	8	5A	85.2%	AA= 28% HIS= 67% WH= 3% O=2%
	Shawn*	Male	25	3A	58.5%	AA= 40% HIS= 40% WH= 7% O= 13%
	Jake	Male	12	5A	60.1%	AA= 16% HIS= 44% WH= 37% O= 4%
	Connor	Male	14	5A	22.7%	AA= 9% HIS= 21% WH= 59% O= 11%
	Mary	Female	28	5A	22.7%	AA= 9% HIS= 21% WH= 59% O= 11%
	Martha	Female	17	5A	78.9%	AA= 8% HIS= 78%

Table 1 Continued- Participants and School Demographics.

						WH= 12% O= 4%
	Jessica	Female	7	4A	70.8%	AA= 23% HIS= 47% WH= 29% O= 1%
FOCUS GROUP 3	Jason*	Male	32	5A	23.8%	AA= 7% HIS= 22% WH= 66% O= 5%
	Chandler*	Male	28	5A	85.2%	AA= 28% HIS= 67% WH= 3% O= 2%
	Charlie	Male	12	4A	61.3%	AA= 4% HIS= 40% WH= 55% O= 2%
	Mike	Male	10	5A	29.1%	AA= 10% HIS= 31% WH= 48% O= 11%
	Holly	Female	3	5A	43.7%	AA= 1% HIS= 6% WH= 91% O= 1%
	Suzy	Female	4	4A	78.1%	AA= 24% HIS= 60% WH= 14% O=3%
	Robin*	Female	3	4A	58.4%	AA= 10% HIS= 28% WH=61% O= 2%
	Tiffany	Female	9	4A	45.2%	AA= 4% HIS= 12% WH= 84% O= 0%

* Participant took part in the members checks interview

‡Economically disadvantaged is defined as one who is eligible for free or reduced-priced meals under the National School Lunch and Child Nutrition Program.[2]

†Ethnicity demographics: AA= African American, HIS= Hispanic, WH= White, O= Other

Document 1 Screening Tool.

Potential Participant Name: _____

Employer: _____

- Are you a certified and/or licensed athletic trainer?
  YES NO
- How many years of athletic training experience do you have?
  _____ years
- Are you currently employed full time at a high school working with adolescent athletes?
  YES NO
- How many years of experience do you have in administrative work such as insurance?
  < 3 years > 3 years
- What district is your school within?
  _____
- Does your school have a Title 1 designation?
  YES NO NOT SURE
- Approximately what percentage of the students in your school receives free/reduced lunch?
  _____
- What socioeconomic status would you consider most of the students in your school to be?
  Low Middle High
- Gender: Male or female

Participant meets inclusion criteria: YES NO

Document 2 Interview Guide.

Introduction

Hello everyone. I would like to thank you all for taking the time to meet with me today. My name is Amber Hardy and I am a graduate student at Texas State University. I intend for this focus group interview session to last approximately 45 minutes to 1 hour. I will be recording the session and taking some notes during discussion, but everything said will be kept confidential. A transcription will be completed after the session and all personal identifiers will be removed from the transcript. You will not be required to discuss anything you don't feel comfortable with and you may terminate the interview at any time without any negative consequences. In addition, termination will not jeopardize your relationship with myself or Texas State University. Does anyone have any questions?

Before we begin, I would like us to go around the room and have everyone introduce themselves. Please give a brief description of the size and location of the high school where you work.

Now, I would like to center our discussion on the possible barriers adolescent athletes and their families encounter through the health care system when trying to receive appropriate care for athletic injuries or other medical conditions that affect participation in athletics. Specifically, we are focusing on the athletic trainer's perspective since we are typically the health care provider who is the first responder to assess and care for an athletic injury. I would like to get your perspectives on health care access barriers using the Health Care Access Barriers Models created through previous research as a framework, which I will provide for you as a visual. Let us begin with a small activity to get our brain juices flowing.

Reflective Activity: I want you all to think about a time in the past when you dealt with an athlete who encountered barriers that affected their access to health care or advanced care beyond the care that you provide in your athletic training room. I'll give you an example to start. A few years ago I interned with a football team at a school where most students came from a low socioeconomic status. One of our star players had a bad toothache and needed to be seen by a dentist since it was beyond my care. Just a few of several barriers this athlete faced included not having insurance or transportation, which prohibited him from gaining access to a dentist. Now, spend about 5 minutes to think and jot down your experiences with barriers. Think about how health care was used and the outcomes of those athletes.

Now, think about what you wrote down as we discuss the barriers presented in the Health Care Access Model. The model proposes that there are three potential barriers The first barrier we will discuss are financial barriers, relating to the cost of care and insurance status.

1.) Tell me how the financial barriers of your athletes or families affect their ability to use or access health care.
2.) Are there any times you can think of where your athlete was able to get around problems with financial barriers? If so, how?
3.) How have you or other colleagues been able to help athletes with financial barriers?
4.) Have you noticed that specific injuries/illnesses are particularly troublesome to deal with in athletes with financial barriers?
    Probe: Are there any illnesses (if only athletic injuries are discussed)? What about problems with getting medications/treatment due to financial limitations?
    Probe: Do your athletes have access to free sports clinics?
    Probe: What if sports clinics are not available in your area?

Let's move on to our next barrier, structural. These barriers include availability and proximity to facilities, transportation, and child care. For example, a family who doesn't own a car may have difficulties accessing a facility since they must depend on public transportation.

5.) Can you think of how these structural barriers may affect your athlete's ability to use or access healthcare?
    Probe: What about transportation issues, bus stops, sidewalks, crime, safety?

Probe: What about the parent having to take time off of work to take their child to a doctor?

6.) Are there any times you can think of where your athlete was able to get around problems with structural barriers? If so, how?

7.) How have you or other colleagues been able to help athletes with structural barriers?
Probe: Drive the child yourself?

The last barrier in the model is cognitive barriers, which relates to the individual or family's general knowledge of health care and communication skills. For example, you may have trouble with asthma treatment compliance in an athlete because mom and dad don't understand the importance of seeing a doctor or getting their daughter's inhaler prescription.

8.) How do you think these cognitive barriers play a role in the athlete's ability to use or access health care?
Probe: Has there been a time when you couldn't communicate with a parent due to a language barrier? What did you do?
Probe: Do parents and/or athletes have problems with understanding how the health care system works?
Probe: Understanding the actual condition or severity/complexity of the injury/illness
Probe: Understanding of the directions/instructions given for proper care (from you or other health care provider)
Probe: Understand how insurance works

9.) Are there any times you can think of where your athlete or family successfully overcame those cognitive barriers? If so, how?

10.) How have you or other colleagues been able to help athletes with cognitive barriers?

11.) Now think about the 3 barriers we have discussed. Have you noticed any trends with healthcare access associated with the type of sport, gender, ethnicity, or age?
Probe: What ethnicity are the athletes who struggle with access?
Probe: Do you think age is a factor?
Probe: What about gender?

12.) Thinking about a combination of these 3 barriers, what happened to the athletes who had these problems with barriers and weren't able to overcome them?
Probe: An athlete with asthma may not be able to see a doctor to get it maintained and may have to quit the team. (Team manager?)
Probe: Do they receive delayed care?
Probe: Decreased prevention leading to further health complications?
Probe: Do they quit?

13.) If we, as athletic trainers are able to identify these barriers with our athletes, do you think there is a way to help improve these issues?

14) Is there anything you would like to add or suggest to this discussion?

I would like to personally thank you all for your time and willingness to discuss personal experiences with me and the group. If you have any questions or comments, please feel free to e-mail me at ah1739@txstate.edu.

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CHAPTER IV

MANUSCRIPT

Introduction

Over the last few decades, participation in high school sports has increased dramatically and will likely continue to follow this trend.[1-3] Sport participation is often encouraged to promote physical activity in young populations due to significant increases in sedentary lifestyles and health issues related to decreased activity like childhood obesity.[4] As more children partake in sports, there is a potential risk for sport-related injury or condition to occur. Some sports involving contact such as football,[5, 6] wrestling,[6] and lacrosse have greater risks for injury[1] when compared to other sports with less contact, but participation in any sport has some risk.

In general, high school athletes sustain an estimated 2 million injuries, 500,000 doctor visits, and 300,000 hospitalizations per year,[7] with the most common diagnoses including fractures and dislocations, sprains and strains, open wounds, and contusions.[5] It has been estimated that 10.1% of all injuries among high school athletes were fractures and 49.7% of those occurred during contact between athletes.[3] Due to the potential risk, athletes should and need to have access to a health care provider and some form of insurance coverage. School nurses and athletic trainers' (ATs) are medical health providers who serve to promote general health and well-being of the student population,

but vary in specific duties. Once school hours come to an end, a school nurse is no longer available, leaving medical care solely to the AT.[8] Unfortunately, not all schools employ ATs[9] and only about 42% of high schools have access to ATs today.[8] Although ATs have a wide scope of skills, athletes may still have to seek additional care in cases of injuries that require emergency care, advanced diagnostics, surgical intervention, or medication. Once an athlete requires additional care beyond that provided by a secondary school infrastructure, the athlete and family will have to obtain services that necessitate medical costs.

In 1999, 1 of 6 people living in the United States were estimated to be uninsured.[10] Due to the declining economy, this number will likely increase substantially. Families who are unable to afford private insurance and are eligible may be covered by public government assistance such as Medicaid or the State Child Health Insurance Program (SCHIP).[11] These families are classified as being underinsured because they have insurance, but the health care access and coverage is very limited. For example, in 2004, Edelstein and Chinn found that 58% of insured children received a dental visit compared with 34% who were underinsured, and 28% who had no insurance.[12] Secondary schools often provide accidental insurance policies for athletes to offset the costs of advanced care, but medical coverage is limited with these plans as well. Athletes whose parents earn enough to be classified as middle or upper socioeconomic status tend to have private insurance,[13] which will usually cover most if not all of medical costs associated with injuries and conditions. The families in low socioeconomic status are often uninsured or covered by Medicaid,[13] so that school sponsored insurance coverage may be the only type of insurance that they have. Injuries

or conditions that cannot be treated by ATs employed at a high school must be referred to a physician or other source of care. Since ATs work under the supervision of a physician, the team physician may often be the first source of care outside of the school facilities, but most team physicians provide complimentary services. Depending on the extent of care provided by the team physician or needed by the athlete, some care may necessitate additional charges or may require visiting another health care provider. These situations may limit the physician's ability in providing the necessary care for the athlete. [14] Anecdotally, uninsured or underinsured families often struggle with gaining access to other sources of healthcare once the AT is unable to provide appropriate care and the team physician isn't capable of providing affordable care. For example, if an athlete suffered from a possible anterior cruciate ligament (ACL) sprain, further examination would be warranted by a physician who would likely prescribe additional diagnostic testing such as an magnetic resonance imaging (MRI).[15] The expense of an MRI of the knee can vary between $400-$3500 depending upon the procedure.[16] Although an average insurance plan could cover most of the cost, those who are underinsured or uninsured could face problems with such an expense.[16] Even if the family found a way to pay for the testing, the physician would likely advise surgery in the case of a positive test; leading to even more expensive medical costs. The families who struggle with these types of cases could try to seek out other opportunities through the community. Social networks in communities often provide information on affordable or free health care services that individuals could choose to utilize.[17]

In addition to appropriate health care insurance coverage several other barriers could impede families from accessing timely and appropriate care. Carrillo et al.

developed a health care access barriers (HCAB) model which describes modifiable health care access barriers that are associated with health care disparities (see figure 1).[18] The model includes three categories of barriers: financial, structural, and cognitive.[18] Financial barriers relate to the cost of care or insurance status. The next barrier, structural barriers, is defined as the health care system's availability found within or outside of health care facilities. The final barrier in the Carrillo et al. model is cognitive barriers, which relates to the individual or family's general knowledge of health care and communication skills. Collectively, these barriers can lead to three intermediary variables: late presentation, decreased prevention, and decreased care.[18] The intermediary variables as presented in the model are the effects from the barriers, which in turn can result in health care disparities.

Since little has been documented on how adolescent athletes and their families maneuver the health care system to receive appropriate care after an athletic injury, our study was designed to understand the possible barriers and intermediary variables from the perspectives of health care providers, specifically ATs. The ATs perspective is unique because ATs are typically the health care provider who would be the first responder to assess and care for an athletic injury or condition. They also have a role in providing referrals, coordinating medical care, and approving return to play. This provides the AT with a unique view of how athletes and their families struggle with any number of barriers they may face with accessing health care. The purpose of our study is to provide a descriptive analysis of ATs perspectives on health care access barriers and intermediary variables of injured/ill high school athletes using the HCAB model as a framework. Since

little has been documented about the phenomenon of interest, qualitative methodology using focus groups and framework analysis were used.

Methods

Participants

We conducted focus group interviews with 21state of Texas licensed and/or certified ATs (see table 1). Each participant was involved in 1 of three focus groups (focus group #1 had 6 participants and focus groups #2 and #3 each had 8 participants). We selected groups through purposive sampling to represent the specific population in relation to the key criterion and purpose of the study.[19] We recruited certified and/or licensed ATs in a variety of geographic areas, including the greater Houston area, central Texas, and south Texas, who currently had full-time positions employed as an AT in a middle-school or high school, and had at least 3 years of experience with administrative work in athletic training. We described administrative work as experience with paperwork including referrals and insurance policies.

In addition, we recruited ATs employed at schools from a variety of socioeconomic statuses and with ethnically diverse populations. Eleven ATs were employed at schools where more than 50% of the students were economically disadvantaged, 8 ATs where between 25-50% of the students were economically disadvantaged, and 3 ATs where under 25% of the students were economically disadvantaged. Nine ATs were employed at schools where over 50% of the students were white and 7 ATs were employed at schools where over 50% of the students were Hispanic. All ATs were employed at schools with less than 25% African American

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1. Tell me how the financial barriers of your athletes or families affect their ability to use or access health care.

2. Are there any times you can think of where your athlete was able to get around problems with financial barriers? If so, how?

3. How have you or other colleagues been able to help athletes with financial barriers?

4. Thinking about a combination of these 3 barriers, what happened to the athletes who had these problems with barriers and weren't able to overcome them?

5. If we, as athletic trainers are able to identify these barriers with our athletes, do you think there is a way to help improve these issues?

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We established trustworthiness using member checks and analyst triangulation. The member checks group served as an opportunity to check the model developed by the first three focus groups for accuracy and introduced a new modified model we developed. The modified model we developed was clarified based on information received from the member checks phone call interviews. Analyst triangulation, another method to establish trustworthiness, was completed between two authors (AH, LV) separately using the framework analysis. The two analysts then came together and discussed the themes that emerged and came to a consensus regarding the model. Analyst triangulation also reduced the potential bias that would have come from one person's analysis and provided ways to assess more directly the reliability and validity of the data that was obtained.[2]

Results

The ATs participating in our study were asked to discuss possible barriers and impacts that adolescent athletes and their families encounter when trying to receive care for athletic injuries or other medical conditions that affect participation in athletics. We asked about the ATs perspectives on health care access barriers using the Health Care Access Barriers (HCAB) Model. Specifically, we asked about the three potential barriers that the model proposed: financial, structural, and cognitive.

A majority of our findings relate to the ATs working with adolescent athletes at economically disadvantaged, ethnically diverse high schools. Our purpose was to provide a rich description of the health care access barriers and impacts experienced by athletes and we found that healthcare access barriers were multilayered in two ways. We found that the healthcare access barriers of athletes greatly affected their families and the ATs who had to help the athlete to confront and manage the barriers. We found that an athlete could experience each barrier in numerous ways, which further complicated the experience of the athlete trying to access healthcare services. We also found that the athletes commonly experienced multiple barriers when trying to access healthcare resulting in health care disparities. Finally, we found that many of the barriers were interlinked with participants describing relationships between and amongst barriers.

Modified Health Care Access Barriers Model

Overview

The HCAB model developed by Carrillo et al. provides an analysis of "modifiable health care access barriers that are associated with health care disparities."[18] The model is

community-based rather than individual-based model meaning that it focuses on creating measurable and modifiable community health interventions as compared to a behavioral model, which focuses on modifiable and non-modifiable behavior based health interventions.[18]

In the original HCAB model there were three modifiable barriers, three intermediary variables and one outcome. The model proposes that the barriers (financial, structural and cognitive) reinforce and affect health care access individually or in concert. The three barriers are hypothesized to lead to decreased screening, late presentation to care and lack of treatment, which are termed intermediary variables. The final component of the model, health care outcomes disparities, is the outcomes of the barriers and intermediary variables collectively.

Based on our findings, we transformed the original Carrillo et al. HCAB model into a modified version we have labeled the HCAB-AT model (see figure 2). In our model, we have confirmed that the financial, structural, and cognitive barriers were present and affected adolescent athletes and families. In addition, we also discovered that another barrier existed that had not been previously described by the original HCAB model. We included a fourth barrier called "*sociocultural beliefs and expectations*" because we found that athletes and families sociocultural belief and environment had an effect on health care access. We found that there were unique problems athletes and their families experienced that were not explained by the other barriers' categories that were associated with this new barrier. Although sociocultural beliefs are typically considered to be individualistic barriers as described in the Andersen model,[18] which includes predisposing factors,[23] we identified themes in this barriers category that could likely be

modifiable with the assistance of facilitators. The predisposing factors in the Andersen model include: age, sex, race, religion, and values about health and illness.[18, 23-25] The only modifiable factor is the values about health and illness, which is a theme that evolved in our new barriers category. Since individuals' beliefs can be modifiable and potentially lead to interventions and/or improvements in athletes and families access to health care, this barrier still fits in our modified Carrillo model. Additionally, we changed the term intermediary variables to "impacts" as we thought it was a more appropriate term to describe the effects of existing barriers. We also added an "*impact*" termed *"source of care"* to the model because we found that health care access barriers caused an additional effect not previously described by Carrillo et al. We found that ATs also described a change in the source of care provided to athletes if a barrier existed. This impact related to how the athletes and their families were able to maneuver through the health care system and the eventual health care provider they were able to see.

In addition, we found that the four barriers could be minimized or possibly eliminated by individuals we have called *facilitators*. These facilitators could include ATs, coaches, physicians, nurses, or other individuals present who assisted the athletes and/or families in finding solutions to their barriers or to minimize the effects of the impacts. We found that the facilitator helped to mitigate the impacts of the barriers to lessen or altogether avoid any negative impacts. We confirmed that this is a necessary component in the model and added it in its own box inter-linking the four barriers.

Individual Themes

Within the modified HCAB-AT model we developed from our focus group interviews, we were able to identify multiple themes that emerged within each barrier. Within each of these themes, there were varieties of impacts from these barriers that athletes and/or their families faced. With the assistance of facilitators, we found that these individuals can often help mediate and find possible solutions to minimize the effects of the impacts on the athletes and/or family. The results from the analysis procedures have been summarized and are presented separately for each of the barriers. In the next section we will identify each barrier, the thematic categories, impacts, and possible solutions. A synopsis of the findings are found in tables 2-5.

Financial Barriers

The financial barriers, including insurance status and cost of care were discussed in all 3 focus group interviews, which produced the greatest conversation and was the most problematic barrier the athletes, families, and ATs faced. The problems centered on 3 thematic categories: general insurance limitations, uninsured athletes, and limitations specific to state/government/school funded insurance. All themes were associated with all four impacts: source of care, time of presentation, quality of care, and decreased prevention. The ATs collectively explained that regardless of the athlete and/or family's insurance status, the athlete and/or family experienced multiple different problems with accessing health care when AT referrals were warranted.

General Insurance Limitations

The ATs found through their experiences that even when an athlete had insurance, problems still occurred with accessing advanced health care. One AT explained that the increases in the costs of insurance were leading families to lose some of their insurance benefits, which sometimes required those families to pay expensive co-pays and/or deductibles. In one case, Mary recounted an encounter with a parent resistant to taking a child to see a physician saying, "Does my kid really need to go to the doctor? You know our deductible is $1,000 or $1,500." When cases like this arose, some ATs explained that the athlete wouldn't be able to go to a health care provider even if they really needed to despite having health insurance. Other ATs experienced problems with limitations and delays with specific insurance plans and coverage restrictions. Sharon recalled multiple occasions where athletes with Health Maintenance Organizations (HMOs) would end up receiving delayed care or wouldn't be allowed to visit the doctor they would have preferred to see for their condition. "They spend that extra doctor's appointment to get the referral to go see someone and then half the time their primary doesn't know what they're doing and they don't refer them or they try 'well let's just sit out for four weeks and then we'll see how you go and then we'll go to an orthopedic if you need it' or something like that". Multiple ATs confirmed the problem and noted that many times that some health care providers did not recognize the expectations of the athlete who wanted to return to sport quickly or who could continue to participate in sport by modifying activity. When asked about specific types of injuries or conditions athletes experienced when the ATs may have had specific problems, Jason commented, "...What I would term the chronic injuries. The ones [injuries] like the kid that sprains his ankle and then he

keeps re-irritating it and re-irritating it and re-irritating it. And those are difficult to deal with insurance wise because what the insurance company would like to do is break it down. Well, you had too many claims, we're not going to do that". Jason continued, "In some districts the word tendonitis didn't exist." Linda explained that she had problems when the athlete needed a referral because they had insurance outside of the United States, which greatly delayed care. She stated, "We had a football player tear his ACL and he had to wait until Thanksgiving break when his parents could come pick him up and take him to Mexico to have the surgery".

Uninsured Athletes

Uninsured athletes typically fell into one of two groups when they tried to access advanced healthcare services. One group sought alternate treatment routes while others chose not to seek care at all. Each focus group interview had multiple ATs who stated that their uninsured athletes sought alternate treatment because of a fear of cost and often would go straight to the emergency room, regardless of the severity of the injury or illness. Mary said, "...They understand to use the emergency room as the urgent care.... That's what their understanding is". Martha added, "... I've had parents take small little bruises to the emergency room. Well, that's the only doctor that was open". Seeking alternate treatment routes caused problems with quality of care in the minds of many ATs. Bill stated, "When those kids go straight to the emergency room, parents don't realize that their quality of care is decreased because they're not seeing a specialist." Other ATs explained that they find most of their uninsured athletes using expired medications or are unable to receive refills on medications because they cannot afford to go to the doctor for an appointment. Warren said that, "Parents won't go back and get the

refills. You know we'll get inhalers and stuff like that, you look and oh, this is expired." Those athletes experienced limitations with decreased prevention of future problems as a result of the illness since their care was not being tracked by a health care provider. Some ATs also added that some of the uninsured athletes had to quit their sport altogether because they never saw a doctor, and therefore were never cleared to play. Robin stated, "…You see the kid walking down the hall and you say why aren't you on the soccer field? You play soccer or you play basketball and they go 'No, I don't play anymore. Well, why not? Well, because I got hurt. Well, are you okay now? Yeah, I'm okay now', but their families aren't gonna take that risk again."

Limitations Specific to State/Government/School Funded Insurance

Many ATs expressed that many athletes experienced problems with accessing care when they had state, government or school-funded insurance. These athletes are defined as underinsured, meaning that their policy does not provide adequate benefits, particularly for injuries incurred through athletic participation. Almost all ATs commented that athletes had problems with the quality of school insurance policies. In particular, most ATs discussed the inconsistency between schools and school districts in their requirements for having school-based insurance. In some cases, some ATs stated that all athletes are required to have some form of medical insurance to participate in sports while others did not. There were also inconsistencies in care based on whether the school-based policy served as the primary or secondary insurance for the athlete. Many ATs explained that when athletes used the school policy to pay for healthcare visits, the athletes had limitations with health care provider visits and had minimal coverage on surgeries and/or diagnostics, which lead to families having to pay out of pocket costs that

they typically couldn't afford. Bill described his school's policy and said, "... They only have five doctor's visits. And then it's $50 a visit. Okay. They have five or maybe ten PT visits at only $15 a visit. Okay. They've got, I think, it's usual and customary for surgeries up to maybe $3,000 and then the diagnostics, it's up to $500. So, I mean, for the most part, if it's a minor thing like if it's just a broken arm that's not gonna require surgery ...the secondary will work pretty well. But if it's an ACL or something, unless someone is going to write it off, they're gonna see a big chunk afterwards." School insurance plans were also difficult to deal with because they had a very narrow definition of injury. For example, Jessica stated, "...We've had a kid in cardiac arrest and he went on with our insurance because it happened on the football field and they filed for catastrophic, which doesn't happen very often, but when they filed for that because he was life-flighted...they [insurance company] said this [cardiac arrest] is not an injury. It's a condition. And so.....our insurance will do nothing for him."

Several ATs explained that most of the athletes with state-funded insurance had very limited health care provider access. Jake explained, "I have a young man who was injured outside of school and is on Medicaid and SCHIPS, but we're really struggling finding him a physician that he can see for an orthopedic injury. Again, if he got hurt at school, it would be easy. I would just fill out our school insurance claim form and get him up to our physician. But anything over and above what our insurance charges, our physician is nice enough to write off, but since its Medicaid and SCHIPS, he's not gonna accept it. So, that's certainly difficult. I think the kid has a significant knee injury and I can't get him seen because we just can't find anyone that will accept it." The other concern with government funded insurance arose with the hassles of frequent paperwork

that the athletes and families had to deal with. Warren explained, "We've had kids that have gone in [to the doctor] and got seen say in January, gone back to follow up in February, well their SCHIPS is gone because they forgot to re-file the paperwork. Now the kid can't follow up."

Several ATs had problems with kids who had military-based insurance. Sharon stated, "TRICARE is awful…and I understand their main concern are the soldiers and getting them back and healthy, but like we had a girl tear her meniscus in July. She did not have a doctor's appointment to get seen until October…they have to go to the base to get it done." In these cases, athletes can only be seen by certain health care providers and the quality of care is often affected because they are not seeing specialists or their care was delayed because they would have to wait for an available appointment.

Facilitator Solutions

We asked ATs in our study about solutions that they or colleagues have provided to help athletes with financial barriers and strategies to help mitigate the results. During all 3 focus group interviews, ATs expressed that they had provided in-house care like rehabilitation while the participants waited to see a health care provider. ATs explained that some athletes were never able to see a health care provider so they provided what they could at that time. The athletes who were insured, but had expensive co-pays and deductibles could receive some benefits with the school insurance policy. Jake stated that, "the benefit to the blanket school insurance plan, at least the one that we have at our school, and I'm assuming it's similar to the other schools that provide it, is that it assists in picking up deductibles and co-pays on athletes that have a primary insurance. As long

as it's not Medicaid, SCHIPS, military insurance, it'll help pick that up." Across all 3 interview groups, ATs consistently were quick to say that favors from health care providers were often provided to assist with financial barriers. The ATs stressed the importance of maintaining a good relationship with the health care providers so they would be more willing to provide assistance. Many ATs explained that their school health care providers offered free sport clinics or weekly school clinics that often decreased the cost of care or waived fees for care provided. Robin said, "I think just educating the other people who are more fortunate. I mean, your doctors, your people like that, because how many doctors are there really in just the state of Texas that probably don't give back to their community like they could or like they should." Other ATs expressed that doctors had been giving back to the community by forming charitable foundations. Peter said that "a few years ago we sent a kid to San Antonio and had his ACL reconstructed and everything, literally free of cost. You just gotta call around and look." Multiple ATs also emphasized the importance of maintaining good communication with the parents in cases where they may need to be walked through the insurance process. In addition, some ATs provided insurance information at annual parent meetings to help them know the plans that would be available to them. Mary stated, "I know we started having a description sheet printed in Spanish because that is our prominent language."

Structural Barriers

The structural barriers are defined as the health care system's availability found within or outside of health care facilities. Our study was able to identify three themes that emerged in this category: transportation limitations, parent availability and communication problems, and healthcare infrastructure constraints. The structural

barriers all affected the availability of the health care system due to the impacts: source of care, time of presentation, quality of care, and decreased prevention.

Transportations Limitations

Many athletes and families dealt with problems with gaining access to health care facilities because of transportation limitations. Several ATs reported that their athletes weren't able to get to the health care facility unless someone else other than a family member took them, resulting in delayed care. This occurred regardless of the financial status of the athlete. However, there was a relationship between socioeconomic status and access to transportation. Holly said, "They don't have a car or their parents are working. Both parents working, or that one parent that they're living with is working, or the mother doesn't drive." Peter stated that his support health care providers were located at a great distance away. The athletes and/or families were unable to transport themselves in those situations causing delayed care, decreased quality of care due to alternate treatment, or no health care altogether. "...a lot of times they will never see a doctor. We have probably three kids right now who have suspected ACLs [anterior cruciate ligament injuries] from football four weeks ago and yet to see a doctor and the parents have no plans of it." This was particularly true when insurance plans had coverage restrictions and the athletes and families were forced to drive greater distances to receive care. Many times ATs spoke of a concern with decreased quality of care or delay of care as an impact of transportation limitations. Holly shared, "We had a kid, he broke his leg in a football game and his mom didn't want him to go anywhere except Richmond Bone & Joint, which is nowhere near Pasadena...and we had to take him out there. Like she did not

want to see any other doctor, but she would not take him. So my co-worker had to drive him all the way out there on a school day, a boy with a broken leg and back."

Parent Availability and Communication Problems

Many ATs seemed to have problems with gaining access to communicate with the parents about the health care needs of their child. Several ATs commented that parents were unavailable to take their children to appointments. Peter said, "for us, we're 20 minutes from the closest health care provider…a lot of families are living paycheck to paycheck and literally cannot afford to take time from work and if they do it's a morning and you know, that's at least 40 minutes in driving that they have to go plus the doctor's time and a lot of times it just doesn't happen because of that." In addition, some ATs were unable to get in contact with parents to convey important information about their child or to gain consent to refer a child for advanced care. In some cases, the difficulty with contacting the athlete's parents added difficulty with seeking timely care. Linda expressed an interesting situation that she had never encountered before. "In a specific situation, we had a student break his arm. Well, we couldn't get a hold of his emergency contact, we couldn't get a hold of his parents, we couldn't get a hold of anybody and it was kind of like, well, are your parents at work? Can we find them at work? No they're in Mexico. Well, like for the day? What's going on here? No, they live there. They come up every once a month or so." In other cases, the AT and parents were unable to communicate because of conflicting work schedules or because the family did not have a working phone number. Some of the ATs at economically disadvantaged schools explained that sometimes the athlete had no parents at all, which made things very difficult. Robin explained her situation and said, "We have like a homeless center for kids

where they go to our school. So they don't have parents. They don't have anything like that. All they have is the facility and the people who run that facility. And there's not a lot of people that run that facility and if they do they're looking at over the 60 kids that live at that facility. They can't take off to go take that kid there so then that becomes an issue and then that becomes an issue because they're under the government and you know so…..there's a lot of red tape." Linda, who was in the 1st focus group, explained that she had a lot of kids whose parents lived in Mexico and were not easily accessible. Suzy, who was in the 3rd focus group stated, "but it's still an issue where none of my kids have cars and a lot of family members are either deported back to Mexico or they only have one parent, or they're living with a brother or sister." A few ATs said that their problem was getting the parents to attend the meetings at the beginning of the season, commenting that when they don't show up, they can't provide them with the necessary information for their child and then they run into problems later. Robin experienced situations like, "if my student has already gotten hurt, do I need to get insurance? Is there a chance of them getting reinjured and our answer is always yes, because you should have gotten the insurance before the first injury."

Healthcare Infrastructure Constraints

The infrastructure of the healthcare system created two unique types of problems that are subsumed under the structural barriers theme. The first problem arose when athletes and families had problems with navigating the procedures of the healthcare system. Although this problem is related to financial barriers, it was not always present because of a financial constraint. In these cases, the athletes and families understood the healthcare system, but had problems with running up against the limitations of the system

when having to seek advanced specialists care. This affected the time and quality of care. Other limitations with the healthcare infrastructure were that many healthcare providers did not understand the role of the patient as an athlete. Linda explained, "Some doctors will say, yes, her knee has this injury and she's out cold for two weeks, and I'm like but there are things that we can do to keep her in shape for that time she's not in athletics." In addition, many health care providers did not recognize the role of the AT as a person who could facilitate or provide the athlete's on-campus care and rehabilitation. Several ATs commented and said that, "99% do not know [healthcare providers]." One AT explained that she had experiences with some health care providers who still didn't know what she did as an AT. She continued to explain that it became a big problem when she received release forms and directions for patient care. Bill said, "But the problem is going back to the physicians. When they end up going to a physician, physicians do not work in athletic medicine. They don't have the cognizant or to give us something that 'hey this is what you need, what's going on and this is what you need to do'. So 9 out of 10 times they just send us a little note, {saying] out for two weeks, out for three weeks." He added that these situations delay the athletes care since the ATs are unsure how to proceed or which protocol to follow.

Facilitator solutions

Again, we asked the ATs in our study how they have been able to assist athletes and families with structural barriers and for some possible solutions. When dealing with transportation problems, most ATs said they, a coach, or sibling of the athlete would drive them to many appointments. Martha stated, "I realize that that's the only way some of my kids will get seen is to take them myself." This was done many times despite being

against school policy. Robin added, "I mean, there comes to that point where you have to decide is this a kid…can I do it? I mean and um a lot of times we'll ask for parent permission, you know, can you send me something in writing stating that I can take your kid, that you're not looking just to say that they did say that." Jake said he specifically had "providing patient transportation" written into his job description to avoid legal liability. He stated, "Well its written into my job description that should the need arise, or if I see fit that I need to take a kid to the doctor I'm gonna do that. So and each physical form is signed off that um you know whether it would hold up in a court of law who knows? But you know should you need to have your child transported… sign me off that you consent to allow it." Other possible solutions when dealing with transportation problems that were discussed were having the health care provider make weekly visits to the school so the athlete was still able to be seen. Robin said, "That makes it kind of nice because at least you know that even though they're not being seen there, if they do have to go get an MRI and things like that at least you have a starting point and you have something to give the kid." Chandler explained that his health care providers' facility was located almost 45 minutes away so he switched his team physician to make it more convenient for the families. In addition, many ATs explained that they were almost always the ones calling the health care providers to coordinate the care. Sharon stated, "If we're the ones making the appointment with them then we know who they're seeing. Otherwise, they may go to a doc in the box or you know, just some random person on the street corner and you know…you never get a doctor's note. You don't know the diagnoses, it doesn't say what's going on." Bill added, "I do that a lot because I can control the situation. And being able to control the situation, then I can dictate how long a

kid can potentially be out." Another solution that some of the ATs mentioned were having good relationships with the health care providers. Bill explained that he uses the same network of health care providers to minimize problems or complications. Joe suggested inviting health care providers to the school athletic training rooms to see the available equipment so better notes and instructions could be given to the athletes. In the member checks group, Jason suggested having medical student residents assigned rotations at the high school to help educate the physician population on athletic training since many still don't know the ATs role.

Cognitive Barriers

The cognitive barriers related to the individual or family's general knowledge of health care and communication skills. We identified three themes: understanding insurance policy, understanding condition/injury and prevention, and language barriers and literacy. Cognitive barriers affected condition/injury prevention, timing of care and quality of care.

Understanding Insurance Policy

During the interviews, several ATs revealed that problems often occurred due to parents expecting greater coverage with insurance policies. This occurred with their primary insurance and possibly the school's secondary insurance. In the case of secondary insurance limitations, the ATs explained that parents commonly overestimated the amount of coverage that a secondary policy provides. In many cases ATs explained that secondary insurance was essentially minimum coverage that had very specific athletic injury descriptions that may limit coverage of existing and

chronic conditions. Shawn said, "...a lot of times they [school secondary insurance] only cover accidents and the chronic injuries aren't covered." Warren explained that many parents were unaware of what insurance policies entailed and stated, "[Parents] they get the paperwork, they read the paperwork, they just sign it, but they don't understand it." The families who didn't understand their coverage often face expensive bills that they can't afford, placing them in a financial bind. Some families who can't pay their bills have to eliminate health care provider visits, decreasing preventative care for the athlete. Other ATs described problems when athletes and parents did not understand their own primary insurance coverage limitations. One AT faced upset parents because they received a bill and didn't realize that their policy didn't cover 100% of all medical costs associated with doctor visits, diagnostics and surgical procedures. Some ATs felt that parents further added to the problem by not dealing with insurance claims in a timely matter. Mike said, "we get the ones [bills] that you know they hold...until the very end and it expires at 90 days for the secondary insurance and they bring all these bills and say who pays for them? Well, read here, you do." Several agreed that parents misunderstood the commitment to paying medical bills. A few ATs said that parents who end up with these expensive bills, whether they pay them or not, often take their child out of athletics altogether because they don't want to take the risk again. Other ATs added that it's really sad to see part of an athlete's high school experience end. Linda stated, "I just recently encountered...a soccer player who you know of course they start week one and she's pretty bad off [concussion]. Well, mom is upset and I guess something happened with her husband and the insurance denied whatever claim or whatever, so she's been

footed with this $15,000 to $20,000 bill and she basically flat out said I cannot take her to the doctor right now. Like it's not possible. You know, like there's absolutely no way…I have to choose and I cannot take my daughter to the doctor…she still hasn't gone...she's just out…this middle waiting purgatory area that they just cannot do anything and it's kind of a sad deal."

Understanding Condition/Injury and Prevention

Barriers to healthcare access often occurred when the athletes or parents did not have a sound understanding of the injury/condition and how to properly care for the injury/condition. Several ATs explained that many athletes didn't understand that imposed activity restrictions extend beyond on-campus activities. Melissa experienced this with a soccer athlete who had a concussion and didn't understand that being restricted from playing soccer at school meant that she wasn't supposed to play with her club team outside of school as well. Multiple ATs expressed that athletes did not understand the health care providers' instructions and that many athletes had weaknesses with conveying the doctor's orders to them. Melissa said, "…they usually come back with something [injury] totally different…if the doctor says okay the note says they're out for two weeks. Well what did he say was wrong with you? Um...something to do with this thing in my knee…well, okay was it the ACL? Like you start throwing things out...he might have said something about…and it's like they have no clue. Especially if they don't write it down and then next thing you know the kid says his ACL is torn, but it's like plica." She explained that many athletes and parents didn't have any idea what the doctors were saying was wrong with them and they weren't asking for any confirmation from the doctor. The ATs explained that they have to rely on the doctor's notes or

speaking with them directly in these situations because the athletes or parents have a hard time communicating the details of the visit. This concern is related to the healthcare infrastructure theme where important information is not conveyed to ATs which affects the plan of care for the athlete and return to play decisions made by the AT. Another example of how cognitive limitations affected an athlete's care is when parents did not understand that their child must be officially released by a health care provider to return to athletic activity. Steven experienced a situation where "the parents try to sign off and say the kid is fine to go back and play and the parent doesn't understand that they can't release their kid even though it is your kid." When athletes and families do not understand that certain protocols must be followed, the athlete's care and access to care is greatly affected.

Language Barriers and Literacy

All ATs commented that many athletes faced language barriers, which made accessing and providing care a great challenge. The ATs explained that they faced problems when trying to communicate with the athlete and/or the family because English was often spoken as a second language. Robin stated, "it's hard when you don't speak the same language to explain to a parent how severe this [the injury] is. When I'm trying to tell them that their kids knee is literally torn apart and that they're not going to be able to play, they see it as this is their kids only way out of the situation that they're in…that their family is in, it's really hard to explain that to a parent and then expect the parent to still trust you to do what's best for their kid." Holly added, "Mine is always confusion cuz the school I work at, I want to say 90% Hispanic, maybe 85%...,most of the parents do not speak English so when the kids get hurt our first question is do the parents speak

English?" indicating that many of the athletes and/or families require an interpreter. Nonetheless, the ATs had trouble with avoiding miscommunications. One AT had an experience where a kid sustained a head injury but she didn't have anybody to translate Vietnamese to the mother so he had to have the injured athlete interpret even though the athlete was concussed. Several ATs had issues with their athletes understanding how to follow directions to a facility or even which facility to go to. Holly said, "we had a kid that went to the doctor the other day and we told him [that he had] a 9:00 appointment. Go to his office. He came back to school the next day and said he went to the hospital, he was there at 9, but they sent him to the emergency room and I was like what? I was like what happened?"

Facilitator solutions

It was harder for the ATs to help with cognitive barriers than financial and structural barrier because it dealt more with understanding concepts than actual facts. Some ATs were able to come up with some ideas and ways to try and help educate the athletes and families better to minimize the problems they faced. Mary stated, "Better information at the beginning of the school year as far as purchasing additional policies for the uninsured or no insured might help. Maybe having forms in various languages might help. I know we started having a description sheet printed in Spanish because that is our prominent second language." Several agreed, while Warren added, "We'll have parent meetings at the beginning of the year and talk about the same aspects, but the problem is those parents aren't there. They're either working or they just will not show up." Another AT recommended finding multilingual health care providers to help with the language barriers as well to try and improve communication and understanding of the athletes and

families. When athletes didn't understand the health care providers' notes, the ATs suggested that they review those notes with the athlete so they would have a full understanding of their injury/condition.

Sociocultural Beliefs and Expectations Barriers

During the interviews, we uncovered an additional barrier that was unexplained by the existing barriers described by Carrillo et al. The new barrier, sociocultural beliefs and expectations, is defined as the effect of an individual's or family's sociocultural belief and environment on their health care access. This barrier was a consistent theme in each of the three focus groups and was later confirmed as a new barrier in the member checks interviews. We found that there were 3 themes that emerged under sociocultural beliefs and expectations: obligation beliefs, fear of deportation, and health care system beliefs, which were associated with all four impacts: source of care, time of presentation, quality of care, and decreased prevention.

Obligation Beliefs

We found that many ATs described a concern that athletes did not receive the best quality care because their parents did not feel obligated to either follow orders or comply with paperwork. Josh explained that it is particularly difficult when parents are health care providers themselves and feel that no one else should make decisions about the course of care provided to their own child. He described a specific situation when he had two students whose father was a physician that completed their pre-participation physicals and signed off on their readiness for physical activity. Josh continued and explained that the father wouldn't sign one of the forms because he didn't agree with it

and couldn't understand why his kids were not cleared to participate. This situation conflicts with the rules of most athletic programs where it is required for a parent to release care into the hands of the AT and team physician. As a parent, they get the opportunity to consent to care, but they cannot dictate care. In other situations, some ATs explained that they could only do and say so much to parents to try and get them to do what was necessary for their child to receive health care, but they were often unsuccessful. ATs often dealt with parents who felt that the obligation of paying and coordinating their child's care should not be theirs. Commonly, ATs are able to assist a great deal in coordinating care, but there is a line where they can't do everything for the athlete and /or family. Charlie shared an experience where he attempted to provide guidance, "when you present an insurance plan that hey, you can get [medical coverage] should something happen, I'm aware of one family that's gotten insurance for their kids at our entire school." Jason added, "What's interesting nowadays a lot of the parents will go, well we can't do that. And they just stop. It's not like we're not sure how to do that, it's just we can't do that. And then they're looking at you like you're supposed to flip the switch and make it happen." Chandler reported, "They don't understand, they just, my kid is playing…they're entitled. You're supposed to take care of my kid."

Fear of Deportation

A few ATs mentioned facing problems with athletes and/or families who had a fear of being deported, which affected their ability to access health care. Shawn explained that he had a situation once when an athlete refused medical care altogether because he didn't want to get sent back to Mexico. He added that those athletes were aware that seeing a health care provider outside of school would require having a social security

number, which some of them didn't have so often they never received advanced care or it wasn't until they went back to their country. Shawn explained that those same athletes' source and quality of care would be greatly affected because they would only seek care where they wouldn't be asked any questions, like in the emergency room since they would be seen regardless. Jake explained that he had athletes who refused preventative screening the school provided for various reasons he believed related to their culture. He stated, "For some reason my soccer team, my men's soccer team who is I'd say 95-98% Hispanic, I think we have one white kid now… they consistently come back no thank you, no thank you, no thank you. So they're turning down this healthcare, this prevention, this screening. You know, we've tried to offer it in Spanish – the consent form in Spanish and it doesn't seem to be helping, so I think it's just a general mindset of we don't want to know, we'd rather just you know and maybe it's a coach's influence as well. Maybe its parents not understanding, therefore I'm not gonna consent, but it tends to…you know. It's difficult."

Health Care System Beliefs

Trust was a problem athletes and/families faced with the ATs, other health care providers, and the health care system altogether. Jason stated, "I'm gonna make a broad statement here. I think there's a general mistrust with lower income individuals of the healthcare system because they've been burned so many times. They've been asked to go to this place and they wait for five or six hours to get cold medicine or whatever it is, and I think there's a general mistrust and that's all racial groups. It doesn't matter. Just socioeconomic low income and I think that there is a general lack of knowledge by some people and even people in high socioeconomic groups of the healthcare industry because

they see it as a place that people go to get rich." Jason explained that a lack of trust between the AT and the athlete and family often causes tension between all individuals involved and the athlete has to face the negative consequences, affecting their health. Sometimes the parents didn't realize that the AT was present to help their athlete with health care, but often they didn't see this because of other factors being a distraction. In the member checks phone calls, this general "mistrust" was a consistent problem all 5 ATs faced with their athletes and families. Shawn explained that athletes and/or families faced problems with health care due to the variety of cultures at his school. He stated, "We have 48 native languages spoken at our school and I've got Filipino families who say, no, there's nothing wrong with my child, I'm not gonna take them. African families who say the same thing. I had an Asian kid who had shoulder surgery, met his older sister – never met his parents. They refused to have anything to do with it." When the athletes and/families didn't trust or believe the ATs recommendations on their athlete's injury/condition, the athlete would face decreased presentation, prevention, and quality of care.

Facilitator solutions

In our study, we found that the ATs who faced problems with these sociocultural and beliefs barrier were having difficulties finding ways to help those athletes and families since everyone has a right to their own culture and beliefs. The ATs realized that they had to find ways to help the athletes and families see other options that they had to offer. Jason explained in the member checks phone call that he experienced better outcomes from those families when he expressed a genuine care for his athletes. He felt that if ATs were able to do that, then they would be able to be trusted by the athlete

and/or parent. Chandler, who was on that same phone call agreed with the Jason. On another member check phone call, Robin thought that if the team physician attended the parent meetings, then that would also help with gaining that trust from the athletes and their families. Other ATs also felt that providing more educational materials on the roles of the health care providers could also help so they really understood what they did for their child.

Discussion

With limited research on how adolescent athletes and their families maneuver the health care system to receive appropriate care after an athletic injury, it is imperative to identify and understand possible barriers and impacts that athletes may face. Once the barriers are identified and understood, interventions can be applied to improve the access to health care for our athletes and potentially remove some of the barriers. Our purpose was to provide a descriptive analysis of ATs perspectives on health care access barriers and their impacts on injured/ill high school athletes using the HCAB model as a framework. In addition, we provided possible solutions for facilitators to use when facing barriers with their athletes and families.

Other models have described health care access barriers such as the Andersen Behavioral Model of Health Care Utilization, which analyzes the factors associated with patient utilization of health care services[24] and focuses on the individual as the unit of analysis.[18] This behavioral utilization model incorporates three population characteristics which had an effect on the environment and health behavior; predisposing characteristics, enabling resources, and need.[25] The predisposing factors included demographics, social structure, and health beliefs. These characteristics play a role in the enabling resources,

which must be present for health care use to occur. The behavioral utilization model does not include all modifiable components, which can be deceiving. If changing components to a system to make improvements is a goal, the components must be modifiable, which was our main reasoning for using the HCAB model as our framework.

All the barriers discussed and themes that developed from the 3 focus group interviews and member checks confirmed that athletes and/families face financial, structural, cognitive, and sociocultural beliefs and expectations barriers that limit their access to health care, resulting in negative impacts. Our results revealed that these barriers often occurred in concert with one another and that an intricate interplay between and amongst the barriers, impacts, and facilitators exists for adolescent athletes with injuries/illnesses that require advanced care.

Financial Barriers

Financial barriers were the most prevalent topic of conversation because numerous athletes and families faced difficulties with insurance. Regardless of individuals' socioeconomic status, the costs of health care worldwide have been an ongoing serious problem and have seemed to continually increase. In a study of pediatric patients, the number of hospitalizations over 4 years did not increase, but the total hospitalization charges over the 4 years increased significantly, affecting the families and third-party payers.[26] Whether an athlete was insured, uninsured, or underinsured, ATs collectively reported that many athletes and their families suffered financially, which lead to negative impacts.

Insured athletes and families occasionally experienced expensive co-pays and deductibles, which could be a financial burden on the family. For example, in an overview of traumatic brain injuries, it was estimated that the lifetime costs of traumatic brain injury in the United States, including medical costs and lost productivity, is $60 billion annually.[27] So even if an athlete is insured, insurance may not cover all costs, especially when a serious injury occurs, requiring health care for several years. More commonly, the uninsured and underinsured athletes and families suffered the most. Consistent with our study where many ATs were employed at schools where over 50% of students from ethnically diverse backgrounds, uninsured families were usually in lower socioeconomic status levels and often were Blacks, Hispanics, and Native Americans.[28] The uninsured often do not have a usual source of care when sick, no personal health care provider, have had no visits to a health care provider in the past year, and are unable to access medical care due to costs.[28, 29] The ATs employed at economically disadvantaged schools explained that those athletes often used an alternative treatment such as the emergency room because payment was not required initially. When athletes seek alternate treatment, their quality of care declines because they are not being seen by specialists in sports medicine and often don't get the necessary care they need. Since these athletes don't have a usual source of care, they lose the opportunity of accessing preventative services,[30] which is an important component of health care.[31] The underinsured athletes, those receiving state/government/school funded insurance often have great difficulty accessing appropriate health care as well. Although they are insured, the coverage on the plans are often very limited in health care providers and the amount covered on surgeries, diagnostics, and other procedures. For example, dental injuries

have been reported to range from $900-$15,000 when surgical repairs are necessary[2] and often these state, government, or school funded insurance programs will not cover a rare injury like dental or eye. With a limited number of health care providers that underinsured athletes are able to visit, the athletes' source of care is altered, leading to potential delays in receiving care and an overall potential decrease in the quality of care.

Structural Barriers

Structural barriers are those defined by the health care system's availability found within or outside of health care facilities[18] and are often associated with financial barriers. We also found there to be a relationship between financial and structural barriers. The uninsured and underinsured athletes and families tended to face structural problems more often particularly with transportation issues. Economically disadvantaged families often did not have a car or access to a car, making it more difficult to access health care facilities. ATs employed at economically disadvantaged schools described that health care providers were located a great distance from the athlete's home. This was particularly true in the cases where insurance plans placed restrictions in providers covered in the plan. Some research has shown that health care providers often choose to run their businesses in more attractive areas, which impedes the access for the lower socioeconomic families in disadvantaged neighborhoods.[17] In our study, if an athlete couldn't find transportation, he or she sometimes would never see a health care provider, which in many cases led to delayed care or decreases in prevention of future injuries/conditions. In rare cases, this could be life threatening depending on the severity of the injury or condition.

In addition to problems with transportation, ATs employed at economically disadvantaged schools described difficulties with physically communicating with parents and to get an athlete the care needed. Sometimes these ATs explained that parents were not reachable, were located out of state, or they were not part of the athlete's life. If ATs couldn't contact parents or guardians about their athlete's injury or condition, they couldn't receive consent, which often delayed care or affected the source of care sought on behalf of the athlete. Sometimes the parents were not available to take their child to a health care facility, which was often associated with low income families because the parent couldn't afford to take time off work, but was also a problem with parents with a higher socioeconomic status. One study found that the average hospital length of stay to be 2.4 days for children with sports injuries,[26] resulting in a lot of missed work for the parent. More serious injuries or conditions, such as fractures, sometimes required hospitalization, which can greatly affect stress on the athlete and family. In one study examining the epidemiology of fractures among high school athletes, 10.1% of all injuries were fractures and 49.7% of those occurred during contact between athletes ,[3] such as in football which is seen in the emergency department most often .[32]

Athletes and/or families also faced problems with the healthcare infrastructure. When health care providers didn't recognize the role of ATs or student athletes, the athlete would potentially suffer because release forms and written directions for care were limited. In many cases communication between the health care providers, the AT, and the athlete and family were altered as well. The athlete's treatment or return to play orders may be delayed because the AT is unable to get in contact with the doctor to confirm the limited directions given. Since ATs should be capable of doing an accurate

initial evaluation after acute injury and determining a clinical diagnosis, the input from that evaluation may be essential to the physician because they may not see the athlete for several hours or days after the injury occurred,[33] reinforcing the importance of communication between the two health care providers. The ATs and team physicians must share philosophical opinions regarding injury management and rehabilitation programs to optimize the athletes care.[33]

Cognitive barriers

Cognitive barriers are defined as a family's general knowledge of health care and communication skills. [18] Just as financial and structural barriers potentially affected one another, cognitive barriers were often connected with the other health care access barriers. ATs employed at schools from a variety of socioeconomic statuses commonly verbalized concerns with the confusion that insurance policies posed to athletes and/or families. For example, in 1993, Garnick et al. created a survey to report how well Americans understood their own health coverage by asking three questions: whether the provider paid for emergency care when outside the provider's service area; whether the provider paid for an annual physical exam; and whether the provider limited the patient's choice of hospitals.[34] Overall, they found that fewer than a third of the enrollees could answer all three of the questions correctly.[34] In our study, when athletes and/or families didn't understand their insurance coverage, the athletes often experienced a reduction in prevention services in their future. The parents of athletes in economically disadvantaged schools were often no longer willing to take their children to health care providers because of the potential medical bills they could receive. These parents didn't understand that their insurance policy didn't cover all medical costs. In addition, parents of athletes

in economically disadvantaged schools often expected greater insurance benefits than their insurance plan provided leading to frustration and anger when they received bills or were informed of the insurance limitations. This even occurred when the family purchased very modest insurance plans from the school district. On some occasions parents forced their children to quit athletics altogether because of fears that they may not be able to afford the necessary care if an injury did occur, or because they wanted to eliminate the risk of their child getting hurt again. ATs described instances where athletes were never seen by a health care provider or were forced to seek care at an affordable alternative source. Unfortunately, many ATs raised concerns with the quality of care provided by alternative sources like at a hospital emergency department, resulting in a perception of a decrease in quality of care. Some athletes forced to quit athletics are affected emotionally and psychologically as well because sport participation is often very important to adolescents and may serve as part of their self-identity.[26] One study explained that children who suffered from a chronic illness or severe injury and did not receive adequate care may have to stop sport participation, which may lead to depression and/or other psychological ailments.[26]

In addition to lack of knowledge regarding insurance policies, ATs explained that athletes and/or families often didn't understand injury/condition prevention or the consequences of an injury/condition. Previous research displays a link between socioeconomic status and knowledge regarding insurance policies. They found that most of these families suffering from cognitive barriers were uninsured or underinsured.[10] In a 2001 study, uninsured, ethnic minorities were compared to insured individuals on the effectiveness of managing chronic illness.[10] The uninsured were found to not understand

illness, lack recognition of illness danger signs, and use home remedies instead of medical regimen.[10] However, in our study, the ATs did not specifically state or allude to socioeconomic status and knowledge of insurance policies being related. Several ATs had experiences with athletes and families who couldn't understand that having an injury restricting them from participation in school athletics also meant that they shouldn't participate in athletics outside of school as well. When these athletes and families did not follow the AT's recommended directions, they risked their own health and the outcome of the injury/condition. The athletes and families also didn't understand the importance of pre-participation exams in providing an early diagnosis of potential diseases that may reduce substantial costs in the future or even save a life.[29, 31] In addition, parents often didn't understand that a medical release was required for continued participation, resulting in their child being out of athletics for extended lengths of time.

ATs described athletes and/or families with language barriers and literacy problems often faced significant problems with accessing health care. Due to several languages spoken by athletes and families, often English as a second language, the ATs described that they and other health care providers had significant difficulties trying to explain injury/condition severity and limitations. The source of care and time of presentation was often affected because a parent did not understand that their child's injury/condition could be serious and may need immediate or advanced medical attention. Even when an injury/condition was not life-threatening, ATs added that parents did not understand that other injuries/conditions such as ACL's, concussions, fractures, etc. could have long term consequences like surgery and rehabilitation, which are very important factors in providing necessary care. Unfortunately, parents may think they can delay

taking their child to a health care provider, resulting in potential debilitating effects for the athlete. ATs explained that these situations often required the use of interpreters, but avoiding miscommunications was a challenge. Many athletes and/or families struggled with instructions and/or directions from ATs for where, when, and what facility they should be going to for follow-up care. These miscommunications can lead to a delayed presentation and/or affect the source and quality of care if directions are not followed. Even when language barriers are not a factor, ATs explained situations where athletes and/or families failed to understand directions from health care providers related to activity restrictions and doctor's notes. Some athletes and/or families didn't understand that activity restrictions at school regarding an injury/condition extended to club sports outside of school. Depending on the severity, these athletes could cause the injury/condition to get worse, resulting in delayed return to activity or potential life-long effects. Athletes and/or families also struggled with conveying the doctor's orders to the ATs. When appropriate instructions are not followed carefully, the plan of care for the athlete and return to play decisions made by the AT can be affected, leading to overall decreased and delayed care.

Sociocultural Beliefs and Expectations Barrier

The new final barrier that we added to our modified model related to the effect of a family's sociocultural beliefs or expectations on accessing health care. An individual or family's beliefs and values were included in Andersen's behavioral utilization model to a minimal extent.[18, 24, 25, 35] One of the categories of the Andersen model included predisposing factors such as age, sex, religion, and values about health and illness.[23] In

our study we only included the values about health and illness component because they can be modifiable to some extent unlike the others.

Athletes and/or families may have limited health care access because of a fear of deportation and/or simply do not want assistance for various reasons. A few ATs employed at schools with predominantly Hispanics experienced athletes and/or families who refused medical care because they were afraid since they weren't United States citizens. These athletes often chose alternate treatment and went to the emergency room where they knew they wouldn't be asked questions and would receive care. In these cases, the athlete's source of care is often affected because they aren't seeing a sports medicine specialist, which could affect the appropriate length of time out from sport participation, resulting in decreased quality of care. Some athletes and/or families may have a lack of trust in the health care system due to previous negative interactions with health care visits and/or providers. ATs employed at economically disadvantaged schools explained that some families feel they have been cheated by the health care system and they just want their money by providing minimal quality care. A study asked respondents to rate their quality of health care services they received in the past twelve months. The results displayed that Native Americans, U.S. born African Americans, Mexican Americans, Central/South Americans, Chinese Americans, and Korean Americans were less likely than whites to give positive ratings on their health care.[36] Some athletes and families may sense negative social stereotypes from their health care provider, poorly influencing their decisions on health care .[37] In a study where respondents were asked to report whether in the past five years if they had felt discriminated against because of their race or ethnicity, more than one in five Native Americans, U.S. born African Americans,

and Puerto Rican and Central/South Americans reported this type of discrimination.[36] Athletes and their families who do not feel welcomed in a health care facility or feel as though they are being treated differently from others will likely influence athletes and their families' compliance with treatment, in turn influencing health outcomes. On the other hand, athletes and their families who feel involved with their care and treated with dignity, and are satisfied with their care are more likely than others to follow their health care providers' treatment plan.[36]

In addition to individual's culture, the ATs described that the athletes and/or families had obligation beliefs that ran counter to typical course of care recommended by ATs and other health care providers. Specifically, athletes and/or parents didn't feel obligated to follow orders or comply with sport participation paperwork that was required by the school's policy including pre-participation exams, insurance forms, etc. In addition, some parents believed that the school district should be obligated to pay their bills and to seek care on their child's behalf since the injury occurred during a school sanctioned event. Most ATs from all socioeconomic status schools explained that they almost always coordinate the athlete's care to get access to health care providers, but they are not able to provide or coordinate all of the care that the athlete needed to obtain the best outcome. When parents refuse to assist in their child's health care while expecting the AT and/or school to do and pay for everything, the athlete will likely receive delayed care. When parents do not follow orders, their child may never get seen by a health care provider and may lose out on preventative care that may or may not be provided by the school.

Possible Solutions and Future Directions

We found that "facilitators" often helped to find possible solutions for barriers or provided support to minimize the effects of the barriers on athletes and/or families. Specifically, the ATs were commonly the "front line" person who addressed the health disparities and often served as a bridge between the athlete and/or family and the health care system. Each barrier discussed has possible solutions that will be explained individually. Since all 4 barriers are multi-layered and often inter-linked with one another and some athletes and/or families may be facing only one barrier or multiple barriers at once, the possible solutions can be associated with one or multiple barriers as well.

In situations where an athlete wasn't able to see a health care provider, whether it was due to a lack of transportation, insurance limitations, parent belief, etc., ATs indicated that they often provided rehabilitation in their athletic training room for athletes to provide some care. Athletes and/or families who were unable to afford to see a healthcare provider were often provided favors from health care providers including physicians or provider visits at a decreased cost, free sports clinics through pro bono physician work, and free surgeries from charitable foundations. In some cases, a school's insurance policy can assist with expensive co-pays and deductibles the insured athletes may have. Several ATs stressed the importance of maintaining good relationships with the health care providers so they would be more willing to provide those favors previously listed. Several ATs recommended that maintaining good communication with the parents was essential so they could avoid any misunderstandings with insurance policies before problems occurred. In situations where communicating with a parent was a problem due to language barriers, ATs recommended providing all information in other

languages to help eliminate confusion. When athletes faced transportation problems, regardless of the reason, one AT recommended following his protocol which was to include providing patient transportation into his job description to avoid legal liability. In this case, the AT would be able to drive the athlete once parent permission was provided. To eliminate confusion between health care providers, requiring the doctor to see each high school athletic training room so better notes can be provided to the athlete and AT. In addition, ATs suggested that using the same network of doctors to familiarize each health care provider with everyone's expectations was important to getting the quickest and best quality results.

Although it is more challenging to assist the athlete's and/or families with the sociocultural beliefs and expectations barrier, it could potentially be possible with motivated and encouraging facilitators. If ATs and/or other facilitators are willing to show genuine care for athletes and families, the athletes and/or families will likely trust them more with providing and recommending care. To also assist in gaining the athlete's and family's trust, having the team physician attend the parent meetings would likely be effective as well to build trust with the community. At the parent meetings, providing educational materials on the roles of the health care providers could also be very beneficial so the parents are aware of who takes care of their child's health care needs while at school and how they do that. With the assistance of these facilitators and the modifications made, we are hopeful that the impacts of all 4 barriers could be minimized greatly and have a positive effect on these athletes and families who are suffering.

In addition to these possible solutions made by the facilitators, some recommendations can be made for future research studies. Researchers can examine the

health care outcomes disparities of adolescent athletes and/or families and experimentally understand how the impacts can affect them. In addition, researchers can investigate the new barrier "sociocultural beliefs and expectations" in further detail since it was only introduced in the Andersen model and the new modified HCAB-AT model. With these potential future studies, we can continue to understand better how the athletes and/or families struggle with gaining access to health care and not only identify, but implement changes to minimize health disparities.

Conclusion

The purpose of our study was to provide a descriptive analysis of ATs perspectives on health care access barriers and impacts of injured/ill high school athletes using the HCAB model as a framework. In general, ATs in our study reported that the three barriers presented in the HCAB model, financial, structural, and cognitive were affecting athletes and/or families' abilities in using and accessing health care. In addition to the 3 barriers proposed by Carrillo et al, we modified the model and included a 4th barrier: sociocultural beliefs and expectations. We confirmed this additional barrier in the member checks phone calls, which included at least one AT from each focus group. Additionally, we confirmed impacts for each barrier that the athletes and/or families had experienced from the barriers. ATs in our study discussed possible solutions that they were already providing and some that hadn't been thought of until discussion lead to other ideas. We hope that high school ATs will consider implementing possible solutions into their work experience.

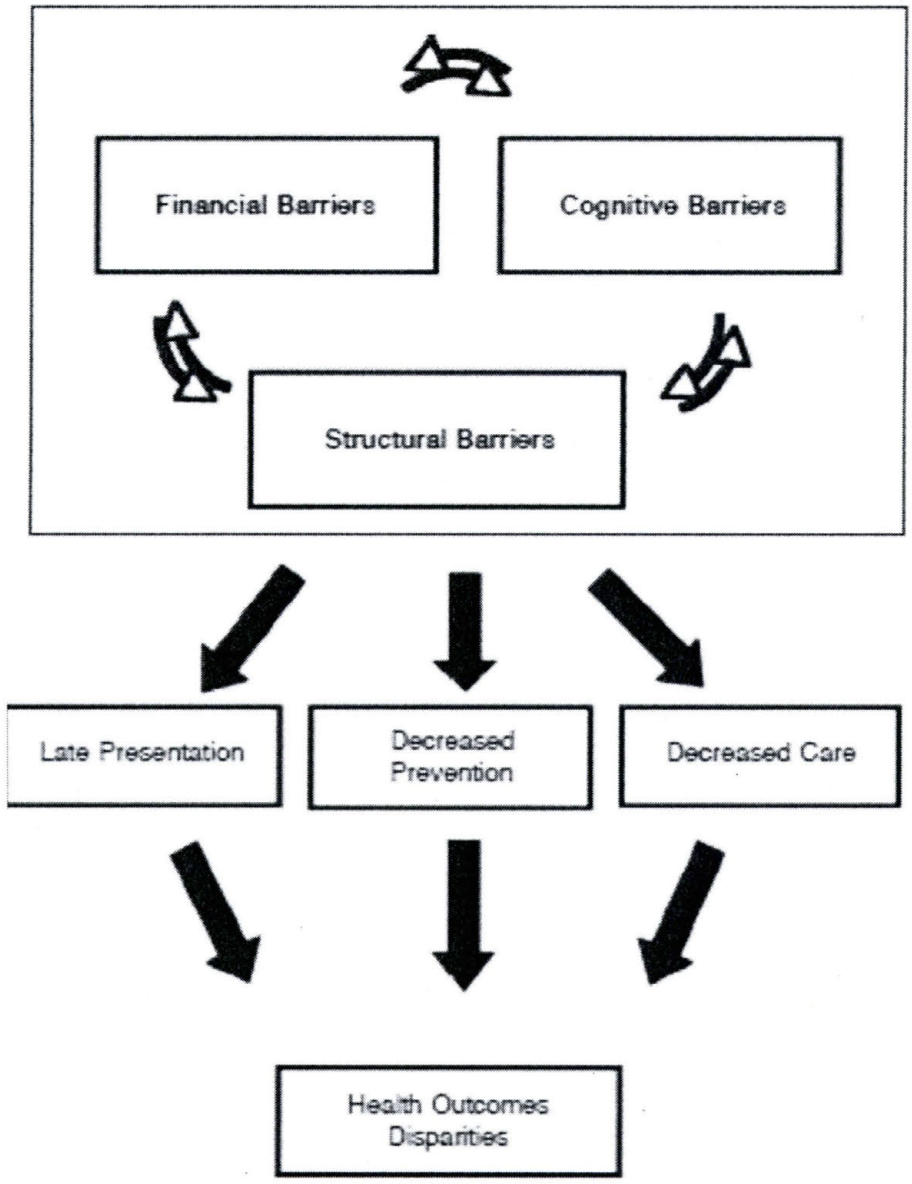

Figure 1 Health Care Access Barriers (HCAB) Model.

Table 1 Participants and School Demographics.

	Name	Gender	Years of AT Experience	School Size	Economically Disadvantaged‡	Ethnicity Demographics†
FOCUS GROUP 1	Bill	Male	27	5A	69%	AA= 5% HIS= 70% WH= 23% O= 1%
	Joe*	Male	7	4A	48.8%	AA= 4% HIS= 58% WH= 37% O= 1%
	Peter	Male	3	3A	31.6%	AA= 3% HIS= 31% WH= 65% O= 2%
	Sharon	Female	6	5A	50.3%	AA= 8% HIS= 64% WH= 23% O= 4%
	Melissa	Female	3	5A	26.2%	AA= 13% HIS= 32% WH= 51% O= 3%
	Linda	Female	3	5A	42.8%	AA= 9% HIS= 49% WH= 37% O= 5%
FOCUS GROUP 2	Warren	Male	23	5A	43.2%	AA= 17% HIS= 39% WH= 36% O= 9%
	Steven	Male	8	5A	85.2%	AA= 28% HIS= 67% WH= 3% O=2%
	Shawn*	Male	25	3A	58.5%	AA= 40% HIS= 40% WH= 7% O= 13%
	Jake	Male	12	5A	60.1%	AA= 16% HIS= 44% WH= 37% O= 4%
	Connor	Male	14	5A	22.7%	AA= 9% HIS= 21% WH= 59% O= 11%

	Mary	Female	28	5A	22.7%	AA= 9% HIS= 21% WH= 59% O= 11%
	Martha	Female	17	5A	78.9%	AA= 8% HIS= 78% WH= 12% O= 4%
	Jessica	Female	7	4A	70.8%	AA= 23% HIS= 47% WH= 29% O= 1%
FOCUS GROUP 3	Jason*	Male	32	5A	23.8%	AA= 7% HIS= 22% WH= 66% O= 5%
	Chandler*	Male	28	5A	85.2%	AA= 28% HIS= 67% WH= 3% O= 2%
	Charlie	Male	12	4A	61.3%	AA= 4% HIS= 40% WH= 55% O= 2%
	Mike	Male	10	5A	29.1%	AA= 10% HIS= 31% WH= 48% O= 11%
	Holly	Female	3	5A	43.7%	AA= 1% HIS= 6% WH= 91% O= 1%
	Suzy	Female	4	4A	78.1%	AA= 24% HIS= 60% WH= 14% O=3%
	Robin*	Female	3	4A	58.4%	AA= 10% HIS= 28% WH=61% O= 2%
	Tiffany	Female	9	4A	45.2%	AA= 4% HIS= 12% WH= 84% O= 0%

* Participant took part in the member checks interview

‡Economically disadvantaged is defined as one who is eligible for free or reduced-priced meals under the National School Lunch and Child Nutrition Program.[20]

†Ethnicity demographics: AA= African American, HIS= Hispanic, WH= White, O= Other

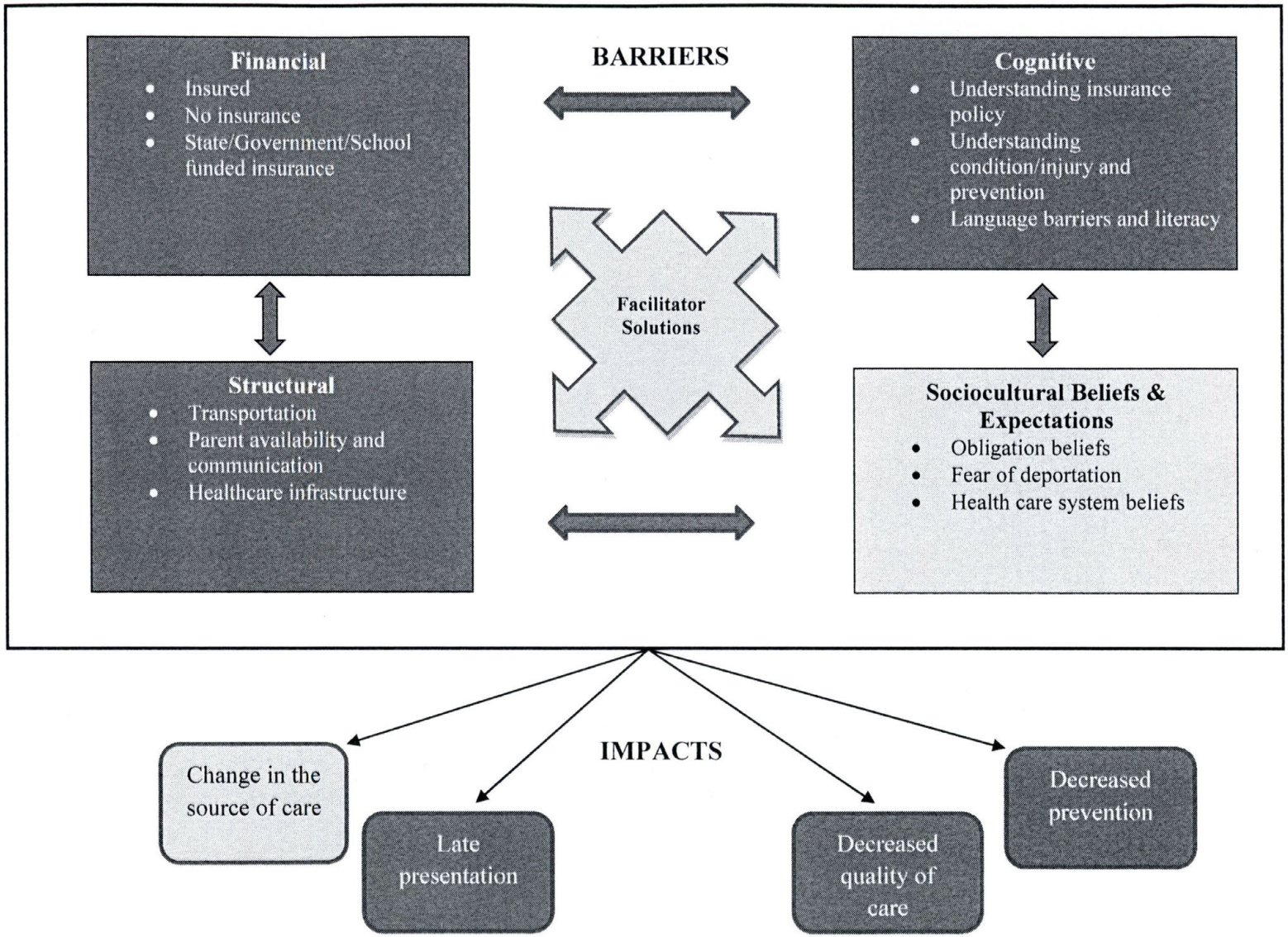

Figure 3 Modified Health Care Access Barriers-Athletic Trainer (HCAB-AT) Model.

Table 2 Financial Barriers.

Financial Barriers	Impacts	Solutions
Insured	○ Expensive co-pays ○ Expensive deductibles ○ Out of state/area coverage restrictions ○ Limitations and delays with specific insurance plans (ex, HMO and military insurance) ○ Cost is rising and families are losing insurance benefits ○ Injury vs. Condition ▪ Coverage limitations with pre-existing condition ○ Chronic vs. Acute ▪ Coverage limited for chronic conditions ▪ Often cover acute accidents only	○ ATs provide rehabilitation while waiting for care ○ School blanket policy may assist with co-pays and deductibles ○ Favors from health care providers (selective) ▪ Pro Bono & charitable foundations ▪ Decreased cost ▪ Free Sports clinics ▪ Write-off provided care ▪ Weekly school clinics ▪ Inexpensive pre-participation physicals ▪ Free baseline testing ○ Offer inexpensive school/secondary insurance policies for one year of coverage. ○ Good relationship with health care providers ▪ ATs make phone calls to find local inexpensive care ○ Keep team health care providers involved ○ ATs maintain good communication with parent ▪ Walk through the process ▪ Provide insurance information at annual parent meetings ○ Payment plans ○ Educate health care providers on problems in community ▪ Encourage donating services
No insurance	○ Alternate treatment ▪ Emergency room (no initial payment required) ○ Fear of cost ○ Expired medications, No refills ○ Child quits sports or does not receive care	
State/ Government/ School funded insurance	○ Secondary insurance school policy ▪ Quality ✓ Limited health care provider visits ✓ Minimal coverage on surgeries, diagnostics, etc. ✓ Pay out of pocket ✓ Football vs. other sports ✓ 24 hour vs. at school only ✓ Pre-existing conditions ○ Limited health care provider access ▪ Few health care providers accept this insurance ▪ Non specialists ○ Insurance coverage denials ○ Monthly paperwork renewal	

Table 3 Structural Barriers.

Structural Barriers	Impacts	Solutions
Transportation	○ No car ○ Health care providers location distance not feasible	○ AT, coach, or sibling drives athlete to appointment ▪ Parent permission ○ Health care provider attends home football games ▪ Evaluated at half time ○ Health care provider makes weekly visits to the school ○ AT attempts to locate more convenient health care providers ○ Have up-to-date emergency contacts ○ AT makes phone call to health care providers to coordinate appointment ▪ More control over who they will see and return to play procedures ○ AT uses the same network of health care providers to minimize issues or complications ○ Good relationship with health care providers ▪ Invite health care providers to school athletic training room to see available equipment. ○ AT stresses to parents to tell health care providers that their child is an athlete. ▪ Better written notes/instructions from health care provider ○ Medical Residents visit high schools ▪ Better understanding of AT profession
Parent availability and communication	○ Working ▪ Cannot afford to take time off to take athlete to appointments ▪ Schedule compatibility ○ Parents do not live in area and so can't be available to help athlete with appointments ○ Unable to reach parents for consent or for educational purposes (working phone numbers) ○ No parents ▪ Athlete lives in homeless shelter ○ Single parent homes ○ Parent meeting attendance	
Healthcare infrastructure	○ Healthcare providers don't recognize role of AT or student athlete ▪ Limited communication between health care providers ▪ Release forms and written directions for care are limited	

Table 4 Cognitive Barriers.

Cognitive Barriers	Impacts	Solutions
Understanding insurance policy	○ Parents expect greater coverage with cheap policy ○ Parents and athletes do not understand coverage problems/limitations ○ Parents misunderstand commitment to pay medical bills	○ ATs hold parent meetings at the beginning of the season to explain school's injury policy ○ Offer information packets and take-home instructions in multiple languages ○ AT must review notes written by health care provider with the athlete ○ AT communicates with school to find interpreter ▪ Co-worker ▪ Sibling ▪ Coaches ○ Find multilingual health care providers ○ AT provides printed instructions and directions for the athlete/family follow
Understanding condition/injury and prevention	○ Understanding that activity restrictions extend beyond on-campus activities (ex. club sports) ○ Importance of pre-participation exams ○ Understanding health care provider instructions & conveying doctor's orders to AT ○ Understanding a medical release is required for continued participation ○ Understanding prescription instructions and refills	
Language barriers & literacy	○ Many different languages spoken by athletes/family ○ English as a second language ○ Understanding limitations/severity of injury ○ Require the services of an interpreter when available ▪ Avoid miscommunication ○ What facility to go to and when ○ Following directions	

Table 5 Sociocultural Beliefs & Expectations Barriers.

Sociocultural/Beliefs Barriers	Impacts	Solutions
Obligation beliefs	○ Parents/athletes do not feel obligated to follow orders ○ Parents/athletes do not feel obligated to comply with paperwork ○ Parents believe that school district is obligated to pay bills or seek care on their child's behalf	○ Provide more educational materials on role of health care providers ○ Be open and have conversations of alternative treatment approaches ○ AT shows genuine care for athlete ○ Team physician attend parent meetings ○ AT helps find health care providers in athlete/family's ethnic group
Fear of deportation	○ Athletes refuse medical care ○ Athletes only seek care where no questions may be asked (ex. ER)	
Health care system beliefs	○ Lack of trust in health care system and health care providers ○ Parents/athletes do not believe in traditional healthcare approach	

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