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Experiences of Youth Recreation Sport Organizations' Administrators with Implementation of Maryland Concussion Law

Donelle McKenna
Walden University

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Walden University

College of Health Sciences

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Donelle McKenna

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Review Committee

Dr. Kimberly Dixon-Lawson, Committee Chairperson, Health Services Faculty
Dr. Chester Jones, Committee Member, Health Services Faculty
Dr. Suzanne Richins, University Reviewer, Health Services Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2015

Abstract

Experiences of Youth Recreation Sport Organizations' Administrators with

Implementation of Maryland Concussion Law

by

Donelle Damali Ainsworth-McKenna

MHSA, The George Washington University, 2004

BS, Morgan State University, 2000

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Health Services

Walden University

September 2015

Abstract

There have been statewide concussion policies implemented in all 50 states and the District of Columbia to address the problem of sports-related concussions in youth athletes. The efforts to implement the requirements of these laws have mainly focused on high school athletics, despite evidence that pre-high school youth athletes who participate in organized community sports through recreation sport organizations are sustaining concussions at a similar rate as high school athletes. Thus, this study explored the implementation of the Maryland concussion law in youth sports recreation organizations in Laurel, Maryland that serve pre-high school youth athletes aged 5–14 years. A qualitative approach was utilized to conduct this study. Administrators of such youth sports and recreation organizations were interviewed to answer the central research question about how the Maryland concussion law is being implemented in youth sport recreation organizations in the state. The diffusion of innovations theory was the theoretical framework used to guide this study as well as to explore barriers to and facilitators of implementing this policy. NVivo software was used to analyze the data, and the results identified concussion training, guidelines, resources, and policing as integral to implementation of the policy. These findings can be used to inform policies, implementation, and best practices for this policy. Thus the individual and community implications for positive social change include behavior change to prevent, identify, and manage concussions in youth athletes to reduce the potential impact of concussions in youth athletes.

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Dedication

This dissertation is dedicated to my children and all children who participate in organized community sports. It is my hope that the findings and recommendations of this study improve policies and practices to keep you and all youth safe as you participate in organized sports and recreation.

Acknowledgments

I would like to thank my parents Donald and Wendy Ainsworth for instilling the values in me to believe in myself, work hard, and give of myself to help others. I would also like to thank my older brothers Dr. Darren Ainsworth and Donald Dane Ainsworth for being role models and showing me the way to be my best. Thank you to my younger brother Dillon Ainsworth for showing me that it doesn't matter how long it takes but it's the journey that builds character. Thanks to my sisters Denise Lee and Deanne Rowe for helping to take care of the kids while I completed my studies. Thanks to my children Taylor McKenna and Drew McKenna for being so patient and sharing mommy. Thank you to Rochelle Henderson and Makeva Rhoden for all the help along the way in understanding Walden's policies and in understanding the course work when I was struggling. Thank you to all my friends and family for all your love, support, and encouragement through this journey. Finally, thank you to my committee Dr. Kimberly Dixon-Lawson and Dr. Chester Jones for guiding me through this journey.

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Chapter 1: Introduction to the Study

Introduction

Each year in the United States, approximately 38 million children and adolescents participate in organized sports; many of these activities put them at increased risk for sustaining a sport-related concussion (Daneshvar, Nowinski, McKee, & Cantu, 2011). The Centers for Disease Control and Prevention (2012) defined concussion as “a type of traumatic brain injury (TBI) caused by a bump, blow, or jolt to the head that can change the way the brain normally works” (para. 2). Concussions can also occur from a blow to the body that causes the head to move rapidly back and forth (Centers for Disease Control and Prevention [CDC], 2012). According to the CDC, TBI is “a major public health concern because it accounts for a large number of injuries, deaths and disability each year” (para. 1). For instance, each year emergency departments (ED) in the United States treat approximately 172,285 sports- and recreation-related TBIs, including concussions, in youth, aged 0–19 years. According to Gilchrist, Thomas, Xu, McGuire, and Coronado (2011), “during the last decade ED visits for sports and recreation-related TBIs among youth including concussion increased by 62%” (p. 2).

Recognizing the seriousness of brain injury in youth sports, many professionals who work in brain injury and youth sports—as well as state governments began to address the problem. They recommended safer play rules; protective equipment; concussion education for parents, athletes, and coaches; return to play guidelines after a concussion; and a variety of state concussion policies (Institute of Medicine [IOM], 2014). However, there is no comprehensive prevention and management strategy for

sports-related concussions, which suggests a need for additional research on concussion management and injury prevention strategies (Daneshvar et al., 2011). According to Bakhos, Lockhart, Myers, and Linakis (2010), this is particularly true for pre-high school athletes (aged 8–13). According to the IOM (2014) and Bakhos et al. (2010), the majority of studies and efforts to address youth sports concussions have focused on high school athletes (aged 14–19) despite data that show younger athletes are experiencing sports-related concussions at a rate similar to that of high school athletes (Shenouda, Hendrickson, Davenport, Barber, & Bell, 2012).

Bhakos et al. (2010) found that half of all ED visits for concussions were for sports-related concussions, and youth aged 8–13 years sustained 40% of them. During the 5-year study period, 502,000 ED visits were for concussions and 8–13-year-old youth represented 58% of them. Approximately 4 in 1000 youth, aged 8–13 years, and 6 in 1000 youth, aged 14–19 years visited the ED for a sports-related concussion sustained during an organized team sport (Bakhos et al., 2010). In addition to a doubling of ED visits for concussions in organized team sports in 8–13-year-olds, the impact on this population is also greater. Concussion in this population is more severe and has a longer lasting impact (IOM, 2014). In fact, Bakhos et al. (2010) warned that although the number of sports-related concussions is higher in the older youth athletes, the number in the younger athletes is noteworthy and warrants additional research. As such, my study focused on the younger athletes, aged 5–14 years, and explored how state concussion laws are affecting this population.

This study focused on state concussion laws as opposed to other actions taken to address sports-related concussions in youth athletes because these laws are new, they vary by state, and there is no comprehensive evaluation of their published provisions, implementation, or effectiveness (IOM, 2014). Additionally, states and the District of Columbia (DC) have enacted a variation of laws and policies designed to better manage sports-related concussions. However, there is a lack of guidance on how they should be implemented, and there is also no evidence-based practice for implementing a state concussion law that is effective for managing concussions in this population (CDC, 2013). According to the CDC (2011), when it comes to managing concussions in youth sports successfully, the extent to which the laws are being practiced or may be influencing how concussions are managed in youth sports is relatively unknown. This is particularly true in sport and recreation organizations that serve pre-high school youth, aged 5–14 years. As such, this study examined how the Maryland concussion law is being implemented in youth sport recreation organizations.

The Maryland concussion law, like many of the other state laws, is relatively new. The first state concussion law was passed in 2009, and the last law was passed in 2014. The Maryland concussion law became effective July 1, 2011 and “applies to youth sports programs organized for recreational athletic competition or instruction for participants under the age of 18” (MDsbo771e, 2011, para. 1). In order to help protect the state’s student-athletes from the dangers of a concussion, the law requires (a) education to coaches, student athletes, parents, and other school personnel about the nature and risk of concussions, (b) automatic removal from play of a student athlete if showing signs of a

concussion, and (c) required written permission from a licensed healthcare worker trained in the evaluation and management of concussions before returning to play (IOM, 2014).

The primary goal of the study was to explore how the Maryland concussion law is being implemented, including information on the dissemination of the requirements of the law, the barriers to implementing the requirements of this law in youth sport recreation organizations, and the factors that have facilitated successful implementation of the law in such organizations. I conducted the study from the perspective of the administrators of these organizations. Administrators of the youth sport and recreation organization are responsible for implementing the requirements of law in their organizations and can describe the implementation process and identify the barriers and facilitators to implementation they experienced. Allowing for a deeper understanding of how the law is being put into practice, the impact on its targeted population, barriers to implementation that need redress, and what has been effective in implementation. Thus, this study produced findings that could be used to develop an effective implementation model, specifically for leaders and policy makers who could look to this research for direction in developing policies and practices necessary to assist youth sport organizations with successful implementation of the law throughout Maryland and beyond. As such, this study has the potential to serve as a model and impact social reform and positive social change across the United States as it pertains to protecting youth athletes on recreation sport teams from initial and repeat head injuries.

In this chapter, I will discuss the background of the topic including the research literature related to the scope of the topic, the gap in the literature that I addressed, and

why the study is needed. This will be followed by the statement of the problem and its significance and relevance to health policy. The purpose of the study will also be described along with the research questions, theoretical foundation for the study, and the nature of the study, including a summary of the methodology used to conduct the study. Included in this chapter are definitions, assumptions, scope and boundaries, limitations, and significance of the study. Finally a summary of the major points in the chapter will conclude this chapter.

Background

According to Purcell (2012), concussions are common sport injuries and are particularly common among the millions of children and adolescents who participate in organized sports and recreational activities each year in the United States. As such, athletes and coaches may not recognize a concussion, may not know the consequences of concussions, and are less likely to report concussions (Bramley, Patrick, Lehman, & Silvis, 2012). However, with youth athletes ages 5–18 years old accounting for 65% of all sports and recreation related TBI (concussions) treated in ED across the United States, there has been significant media attention to concussions, thus resulting in a variety of efforts to address the problem (Covassin, Elbin, & Sarmiento, 2012). The efforts have largely been around prevention and management of concussions (Hjortedal, 2013). These efforts include safer play rules, protective equipment, baseline testing, concussion education to coaches, parents, and athletes, return to play guidelines and policies, and state concussion laws (Purcell, 2012). However, none of these efforts independently and effectively address the problem. In fact, experts in the field have recommended a

combination of these efforts throughout the literature (Covassin et al., 2012; IOM, 2014; Johnson, 2012; Lueke, 2012; Purcell, 2012). For instance, McLaughlin (2012) suggested there are two steps needed to address the dangers of concussions in youth athletes; initial prevention and proper management are essential to reducing the impact of concussions on youth athletes, and a uniformed standard to addressing concussions in youth is needed.

Efforts to create national guidelines for the prevention and management of concussions began in 2008, and the first state concussion law was passed in 2009 by the state of Washington. Since then, all 50 states and the District of Columbia have implemented concussion policies (IOM, 2014). While each law is unique, most include three components: (a) education for coaches, parents, and young athletes on symptoms and risks; (b) removal of the athlete from play if suspected of having a concussion; and (c) the youth athlete needs to be cleared by a licensed healthcare worker before returning to play (McLaughlin, 2012). In addition to these state laws, colleges and high school athletic programs have also begun to develop procedures for addressing concussions in their student athletes. While on the right track, efforts by the National Collegiate Athletic Association (NCAA) and the National Federation of High School Associations (NFHS) are not comprehensive and only apply to college and high school athletes, thus not addressing youth athletes playing sports in an educational setting at the junior high level or younger or in recreation leagues that are not in an educational setting (McLaughlin, 2012). There is therefore a gap in addressing concussions in youth athletes in junior high school and younger and those participating in youth sport recreation sport leagues. Like the NCAA and NFHS, researchers and experts in the field have also focused their efforts

on student athletes in high school and above (McLaughlin, 2012; Shenouda et al., 2012). For instance, implementation of the varying state concussion policies has mostly been associated with high school sports (CDC, 2013). Thus researchers know how the requirements of the concussions laws are being implemented in high schools but not in recreation sports for youth not in high school (CDC, 2013; Lueke, 2012). According to Lueke (2012), concussions have long-term effects on younger athletes, and efforts addressing concussions should include all youth athletes. The CDC (2013) found that state concussion law requirements often do not include or apply to private recreation leagues and recommended that they should.

The additional gap identified in the literature was the lack of evaluation of the state concussion policies, a potential effect of the newness of such laws (IOM, 2014). The CDC was able to conduct a case study on the implementation of concussion policies in the states of Washington and Massachusetts, as these two states were the first two states to implement statewide concussion policy. The CDC (2013) identified several barriers to implementation and lessons learned by the early implementers of such policies and recommended that future studies evaluate the impact of the requirements of concussion policies. Specifically, the CDC recommended understanding the various components of the law and how each component is actually implemented, including the differences between planned and actual implementation. This study built on the recommendations of the CDC study as well as the gaps identified in the literature. As such, this study explored how the Maryland concussion law is being implemented in youth sport recreation organizations for youth, aged 5–14 years. By exploring how the components of the law

are being implemented in this population, I identified barriers to implementation along with factors that support effective implementation. Thus, the findings in this study can be used to guide discussions on addressing concussions in youth sports recreation organizations that serve youth aged 5–14 years who are not in high school, as well as in developing implementation plans to serve as a guide for implementing concussion policies in individual states.

Problem Statement

This study adds to the literature on concussions and youth sports. The research problem is that efforts to address concussions in youth athletes have mainly focused on high school athletics, while pre-high school athletes are sustaining concussions at a similar rate to high school athletes (; McLaughlin, 2012; Nelson, Yard, Comstock, & McKenzie, 2011; Shenouda et al., 2012). Additionally, with the number of ED admission rates for children with sports-related head injuries increasing by more than 90% between the years 2002 through 2011, preventing and managing concussions in youth sports is essential to protecting youth athletes (Hanson, Pomerantz, & Gittelman, 2013). Concussion education for coaches, parents, and youth athletes, strict return to play guidelines and statewide concussion policies have been the dominant efforts that I identified in the literature to prevent and minimize the dangers of concussions (Covassin et al., 2012; IOM, 2014). In response to the dangers of concussions and these recommendations, many states have implemented state concussion laws that incorporate some form of these recommendations (IOM, 2014; Shenouda et al., 2012). However, most state concussion laws do not apply to private or youth recreation sport leagues and

thus are not addressing concussions in youth ages 5–14 who participate in such leagues (CDC, 2013), indicating there is a gap in the literature on state laws and actions to protect athletes age 5–14 from sports-related concussions. Thus, how state concussion law is being implemented in recreation sport leagues that target youth athletes age 5–14 is unclear.

Additionally, given that the first concussion law was adopted in 2009 and the last one in 2014, there is little information on the effectiveness of such laws, including the implementation of the laws. Thus, there is little information to build on, suggesting a need for more research on the implementation of state concussion policies. Therefore, the problem is that while researchers know the importance of the concussion laws in protecting youth athletes and how they have been implemented in high school athletics, there is a gap that exists in the literature regarding how they are being implemented in recreation sport leagues for youths ages 5–14. As such, this study focused on implementation of the Maryland concussion laws as it pertain to recreation sport teams for youth age 5–14 in Laurel, Maryland. Maryland state concussion laws apply to not just athletes in high but those in any organized competitive sports team that utilizes school property or state parks and planning facilities for practice and/or competition. This qualitative study identified how the Maryland concussion law requirements are implemented in recreation sport teams for youths ages 5–14 as described by administrators of Maryland recreation sport teams in this age group.

Purpose of the Study

There have been several interventions to address this public health problem of concussions in youth athletes. The state of Maryland chose to implement a statewide concussion law as the method of intervention to address concussions in youth athletes in Maryland. The Maryland concussion law, Education—Public Schools and Youth Sports Programs—Concussions, was signed into law on May 19, 2011 to protect the state's youth athletes from the dangers of a concussion. This study explored the implementation of the Maryland concussion law in youth recreation sport organizations for youth age 5–14. As such, the concepts of interest in the study were how the new law and its requirements were being communicated to such organizations and how these organizations are implementing the requirements of the law within their organizations. These concepts were chosen to identify and explain barriers to implementation as well as facilitators of successful implementation in order to inform policy makers and future implementers of this policy.

Research Questions

The central research question in this study was, how is the Maryland concussion law being implemented in recreation sport leagues for youth age 5–14? This phenomenological study was based on the experiences of administrators of recreation sport leagues for youth age 5–14 years old in the state of Maryland. In addition to the central question, there were additional questions the research addressed. These subquestions were:

1. What are the identified barriers to implementing the requirements of the Maryland concussion law in recreation sport leagues for youth age 5–14 years old?
2. What are the elements that support the implementation of the Maryland concussion law in recreation sport leagues for youth ages 5–14 years old?

Theoretical Framework for the Study

The intent of the Maryland concussion law is to change the attitudes and behaviors of coaches, parents, school personnel, and athletes in youth sports in order to protect youth athletes from the dangers of concussions (Crutchfield, 2011). According to Crutchfield, the law as an intervention focuses on increasing awareness of concussions, management, and treatment, requiring change in attitude and behavior within the community of youth sports. In essence, the behavior change intended by the law is to educate parents, coaches, school personnel, and players on how to recognize a concussion, manage a concussion, and adhere to return to play guidelines in order to reduce the number of concussions and the long-term effects of concussions in youth athletes (SportsConcussions.org, 2011). The diffusion of innovations theory served as the framework for this study because it is a behavior model theory with a particular emphasis on the process of how the innovation/intervention is introduced and implemented (Painter, Borba, Hynes, Mays, & Glanz, 2008). This theory was made popular by Everett Rogers, a professor of communication studies that purports diffusion is how new ideas or innovations are disseminated and adopted by people (Rogers, 1962).

This study explored the implementation of the Maryland concussion policy in youth sport recreation organizations from the perspectives of those responsible for implementation and most impacted by implementation. As such, this research employed a qualitative approach to exploring how the new policy as an intervention was disseminated to such organizations and how such organizations implemented the policy and its requirements. According to Green, Ottoson, and Garcia (2009), in public health the diffusion of innovations theory is primarily concerned with the distribution and communication of new information including policies to the public or a specific target population, as well as the implementation of such actions. Implementation in terms of adoption of the new practice and adherence to the new policies is part of the diffusion process; thus using the diffusion of innovations theory to identify the barriers to dissemination and implementation was appropriate in this study (Green et al., 2009).

Nature of the Study

The nature of the study was a qualitative approach. I used a phenomenological strategy of inquiry to describe the experiences of administrators of youth recreational sport organizations in the state of Maryland with the implementation of the Maryland concussion law. This qualitative approach was consistent with understanding how the Maryland concussion law is being implemented as experienced by those included in the legislation and therefore most impacted by it. The law requires administrators of youth sport organizations to ensure athletes, parents, and coaches in their organization receive concussion education training on concussion awareness, prevention, and management, including adhering to return to play guidelines. Therefore, in order to find out how these

requirements are being implemented, it is essential to explore the experiences of those responsible for implementing such requirements. As such, I interviewed the administrators in youth recreation sport organizations in Laurel, Maryland and asked them to describe their experiences with the implementation of this law. This included describing how the information of this new law was communicated to them, how they disseminated such information throughout their organization, how the requirements are being implemented, and how the behavior and attitudes of the athletes, parents, and coaches have changed since implementation. The descriptions provided by the administration resulted in data that identified the barriers to implementation as well as factors that facilitate successful implementation of this new law.

I gathered the data for this study from interviews with administrators of youth recreation sport organizations in Laurel, Maryland; records from the youth recreational sport organizations as they pertain to guidelines and policies for implementation of the Maryland concussion law requirements; and documents from the state of Maryland Concussion Law legislative records. I used qualitative data software to store, organize, and extract data. I analyzed and coded the data for primary themes. Coding allowed me to identify the emergent themes and follow up on such themes. I also made recommendations based on the identified themes.

Definitions

Recognizing that the terms used in this study may have multiple meanings and multiple definitions by various sources, I provide the following definitions as they relates to key concepts of this study.

Concussion: A concussion is “a type of TBI, caused by a bump, blow, or jolt to the head that can change the way your brain normally works. Concussions can also occur from a fall or a blow to the body that causes the head and brain to move quickly back and forth” (CDC, 2011, para. 2).

Pre-high school: Youth who are not yet in high school. This includes youth in junior high school and younger who participate in non-school athletic programs. Bakhos et al. (2010) defined this as youth ages 8–13. However, for this study, pre-high school youth included youth ages 5–14 who participate in organized team sports (CDC, 2011).

Traumatic brain injury (TBI): This type of injury is “caused by a bump, blow or jolt to the head or a penetrating head injury that disrupts the normal function of the brain” (CDC, 2011, para. 2).

Youth sport recreation organization: A non-school athletic programs for competition or recreation for children and youth who are pre-high school. These programs can be sponsored by the Department of Parks and Recreation, nonprofit, and for profit organizations (IOM, 2014).

Assumptions

In this study, the assumption was that the youth sport and recreation organizations in Maryland are aware of the concussion law and are in various stages of implementing its requirements. This assumption was made because the law was signed into law on May 9, 2011 and was effective July 1, 2011. It requires youth sport programs seeking to use

public school of parks and recreation facilities to verify compliance with the education requirements of the law, specifically confirming concussion information was distributed to parents or guardians and providing proof that parents and guardians acknowledged receipt of such information. Additionally, the sports program must provide their intent to comply with the concussion information practices annually to the local school system or appropriate agent. This provision applies to instructional and competitive youth sport groups using public facilities such as schools and parks and recreation properties.

Beginning January 1, 2012, any youth sports program issued a permit to use any school or park and recreation property would have to be in compliance with the requirements of the concussion law and therefore should be aware of the law and at a minimum implementing the concussion education component to parents and guardians.

This assumption was important to the study because the law has been in effect for almost 3 years, and in order to explore how the youth sport organizations that it applies to are implementing the various components, the organizations need to be aware that there is such a law and requirements. Additionally, the participants in this study were a sample of administrators from youth sport recreation organizations in Laurel, Maryland who have received permits since January 1, 2012. These administrators are responsible for securing permits and implementing the concussion law requirements throughout their organizations, and as such through interviews, they described their experiences with the implementation of the Maryland concussion law.

Scope and Delimitations

State concussion legislation was chosen as the focus of this study because it is the one effort to address sport concussions in youth athletes that includes 3 approaches (education to parents, coaches, and athletes; return to play guidelines; and clearance form licensed provider to return to play) for concussion prevention and management that together if implemented appropriately poses a great opportunity to reduce the incidence and impact of concussions in youth sports (McLaughlin, 2012). Additionally, there have not been any published data that provide a full evaluation of the implementation and effectiveness of these laws (IOM, 2014). In fact, of all the fully enacted and adopted state concussion laws, 39 of them were passed between 2011 and 2013 (Tomei, Doe, Prestigiacomio, & Gandhi, 2012). This suggests that the lack of evaluation of concussion laws could be attributed to a lack of data in states due to the laws being fairly new. The CDC conducted a qualitative assessment of the concussion laws in the states of Washington and Massachusetts but only focused on the return to play component of the law from these two states that were early implementers of statewide concussion policies (CDC, 2013). The purpose of the CDC study was to “present lessons learned and suggestions regarding the implementation of the return to play component of concussion laws” (p. 3). However, the study identified several barriers to implementation and provided recommendations for future research (CDC, 2013).

For instance, lack of awareness of the concussion law and its requirements was identified as a barrier to implementation in the CDC study, along with lack of guidelines and concussion information for private recreation leagues and defined roles and

responsibilities associated with implementation. The CDC suggested that states should plan to evaluate the impact of concussion laws including understanding the various components of the law and how each component is implemented, including the difference between planned and actual implementation. The recommendations and barriers to implementation identified in the CDC study along with the fact that there is variation in state concussion laws and most of the state laws do not provide guidance on how the components of such laws should be implemented, which influenced the focus on this research study. According to the IOM (2014), the lack of guidance to implementers of the concussion laws often results in such implementers making decisions after the law has been passed on how to implement the various components, which may impact the success of implementation. As such, exploring how the Maryland concussion law is being implemented as experienced by those responsible for implementation allowed for identification of barriers to implementation as well as facilitators of successful implementation. These findings can inform implementation in youth sport recreation organizations in Maryland and in other states.

Maryland was chosen because it has one of the most comprehensive state concussion laws (Tomei et al., 2012). Specifically, Laurel, Maryland was selected because of its location in that it spans three counties (Anne Arundel, Howard, and Prince George counties) and yielded data that are representative of the entire state. Youth, aged 5–14 years who are pre-high school, were chosen as the target population to be investigated because other efforts have focused on the high school population. McLaughlin (2012) stated that concussions have a more severe impact on younger

athletes and recommended efforts to address concussion in younger athletes should vary from efforts used in older athletes. Youth aged 14–19 years who are in high school can participate in high school athletics while youth aged 14 and younger who are not in high school participate in organized team sports through youth sport recreation organizations. As such, this study explored the implementation of the Maryland concussion law in youth sport recreation organizations.

I investigated several theories to serve as the theoretical foundation of this study. The purpose of the state concussion laws is to influence behavior change in coaches, parents, and athletes in order to prevent and manage concussions in youth sports. As such, a health behavior theory was most appropriate. I investigated health behavior theories such as the health belief model, theory of planned behavior, social cognitive theory, and diffusion of innovations theories. Along with these health behavior theories, I also investigated the implementation theory but excluded it because although it has been applied in public health and policy, its roots are in economics (May, 2013). Ultimately, I selected the diffusion of innovations theory to serve as a guide in conducting this study because it addresses behavior change on a community level (NIH, 2005). Community level behavior theory models address individual, group, institutional, and community factors that may influence behavior change. In order to foster change in the youth recreation sport organizations community, a multi-level approach is necessary, and it is an approach supported by the National Institutes of Health (NIH). Implementation of the Maryland concussion law requires individual behavior change along with organizational and regulatory changes in order to be effective; thus, using the diffusion of innovations

theory to guide this study was appropriate (IOM, 2014). Although the qualitative nature of this study limits the results of the study to be generalized, it does possess potential for transferability. Youth sport recreation organizations can use the findings in this study to improve implementation of the law and its requirements in their organizations.

Additionally, educators, advocates, providers, parents, researchers, and policy makers can use the findings in this study to understand what works best in legislation. The intent is to identify a set of model provisions/standards for implementation that can be applied with uniformity across states, therefore reducing variation in state laws and their implementation. Ultimately, the findings in this study can be used to inform policy and decision makers as they move forward in addressing concussions in youth sports.

Limitations

It should be noted that there were limitations to this study. For instance, the qualitative approach of individual interviews of administrators of youth sport recreation organizations only provided the perspectives of administrators. Although administrators are responsible for implementing the law within their organizations, coaches, parents, and athletes are also important to the implementation of the law. In order for the law to be effective, coaches, parents, and athletes have to comply with the law and change their behavior. The perspectives of the parents, coaches, and athletes, would provide additional information on the effectiveness of the law; specifically, they could clarify if their behavior changed as a result of the law. However, because this study focused on the implementation and not impact, it does not provide recommendations or guidance on the effectiveness of specific components of the Maryland concussion law. It only provides

suggestions around planning and implementation of the existing law. The information presented is based on the experiences of a limited number of youth sport recreation organizations in one state; therefore, the findings may not be generalized to other states with similar laws. However, states can use the findings to guide discussions with key stakeholders like policy makers and those responsible for implementation to develop an implementation plan tailored to their state.

It is also important to note there was potential for bias in this study. I work on TBI from the regulatory perspective; specifically, I was a federal employee who managed a TBI program that funded states to improve their state service systems to serve individuals with TBI, including youth with concussions. I am also a parent to two youth athletes who participate in the two youth sports (football and soccer) that yield the highest concussion rates in youth athletes (IOM, 2014). As the researcher serving in the role of the instrument, I may influence the perspective of the interview questions, thus leaving room for bias. To limit the potential for bias, I fully disclosed this information prior to beginning the interview questions to address the appearance of biased or leading questions.

Significance

In order to protect youth athletes aged 5–14 years old from initial and repeat concussions, the implementation of the requirements of concussion law is essential. Allowing the administrators to describe their experiences with the implementation of the law provided a deeper understanding of how the law is being put into practice, what may be barriers to implementation that need addressing, and what has been effective in

implementation. Additionally, the study focused on a population (youth athletes age 5–14 years old) that the law includes but other studies have not primarily focused on. Although the results may not allow for generalization, they may allow for transferability. Laurel, Maryland spans three counties in Maryland, and the data gathered from these sites can be transferred throughout the state. Leaders and policy makers could look to this research for direction in developing policies and practices for implementation of the law necessary to assist not only youth sport organizations for children aged 5–14 years old but all youth sport organizations with successful implementation throughout Maryland and beyond. As such, this study has the potential to impact social reform and positive social change across the United States as it pertains to protecting youth athletes from initial and repeat head injuries.

Implications for Social Change

For youth athletes aged 5–14 years old, identifying the best practices for implementation that can protect them from the hazards of sports-related concussions will allow them to safely participate in sports. Therefore, knowing what has worked when implementing the requirements of this law as well as what needs to be improved will put processes into place to ensure for implementation that serves the purpose of protecting youth athletes, thus ensuring positive social change for individual youth athletes. However, youth athletes will not be the only individuals to benefit from the results of this study. Parents as well as coaches and providers will be better informed on how to recognize and manage concussions. In essence, the study influences positive behavior

changes in these individuals, which in turn will have an overall positive social change on the community of youth sports.

Youth sport and recreation organizations in the state of Maryland can also use the results to successfully implement the requirements of this policy in their organizations. Because this study is the first to explore the implementation of a statewide concussion policy in the community of youth sport recreation organizations, the study also has the potential to be used by youth sports and recreation organizations across the country that are implementing similar concussion policies. The overall positive social implication for this study is that it fills the gap in research that has not addressed the implementation of statewide concussion policies in this younger population. This study adds to the body of literature in identifying best practices for implementing statewide concussion policies in youth sport and recreation organization that serve the pre-high school population also impacted by sports-related concussions. Thus, the study has the potential to foster behavior and policy changes that will protect youth athletes from the impact of sports-related concussions.

Summary

Concussions are extremely common in youth sports and as a result go undetected and therefore unreported (Lueke, 2012). However, the increasing number of concussions in youth sports has garnered the attention of the media and legislators. The legislative response to this problem was two federal concussion bills: the Protecting Student Athletes from Concussions Act of 2010 and the Concussion Treatment and Care Tools

Act of 2010 (ConTACT Act), neither of which has been passed by U.S. Congress as yet (Lueke, 2012). The legislative response from states was a variation of state concussion laws. Not only do these laws vary by state and in their requirements, they also vary in implementation (McLaughlin, 2012). Notably, guidelines on how to implement the laws' components are lacking (IOM, 2014). Therefore, leaving implementation up to the various organizations that the laws apply to may influence the effectiveness of the laws and how they are implemented. This variation contributes to the lack of published comprehensive data on the implementation and efficacy of such laws.

With no comprehensive data, there is no implementation model that states can use to effectively implement the components of their concussion laws in their states. In exploring the implementation of the Maryland concussion from the administrative perspective, there is the potential to gather information that will identify barriers to implementation as well as facilitators to successful implementation that can serve as a model to other states for successful implementation. Ultimately, the findings in this study can be used to inform policy makers and future implementers of state concussion laws on how to implement such laws to foster the intent of the law. The intent of the varying state concussion laws is to prevent and manage concussions in youth sports through behavior change of coaches, parents, and athletes. According to NIH (2005), efforts in health promotion and health behavior should be informed by theory in order to be effective. As such, the diffusion of innovations theory served as the guide in this study to explore how the Maryland concussion law is being implemented in youth sport recreation organizations. The following chapter will focus on the literature review conducted for

this study. This includes details on the literature search strategy, the theoretical foundation, historical application of the theory, rationale for the theory choice, literature review related to the key concepts of the study, and a summary of the chapter.

Chapter 2: Literature Review

Introduction

Concussions are responsible for the more than half a million visits to the emergency department (ED) by children aged 14 and younger (CDC, 2012). Of more significance is the number of sports-related concussions in this age group. According to Hanson, Pomerantz, and Gittelman (2013), the ED admission rate for children with sports-related head injuries increased by more than 90% between 2002 and 2011. Many states recognize the danger of concussions to youth athletes and are taking action to protect them from sustaining concussions and the potential long term effects (Shenouda et al., 2012). The states' actions and recommendations from concussion experts range from providing concussion education to coaches, parents, and athletes to the institution of statewide concussion policies (Covassin et al., 2012). In fact, all 50 states and the District of Columbia have implemented some form of concussion laws/policies aimed at protecting young athletes. However, these laws vary in standards and by state (IOM & NRC, 2014).

My initial review of the literature revealed that states' efforts have been focused on high school athletics (Doolan, Maerlender, Goforth, & Gunnar Brolinson, 2012). However, there are studies that report youth ages 5–14 who participate in organized competitive sports or on recreational sport teams sustain concussions at a similar rate to those in high school athletics (Radelet, Lephart, Rubinstein, & Myers, 2002). For instance, Bakhos et al. (2010) found that of child ED visits for concussions, 4/100,000 were of youth ages 8–13 years (i.e., pre-high school aged) due to a sports-related

concussion, while 6/100,000 were of youth ages 14–19 years (i.e., high school aged) as a result of a sport related concussion. However, with the states' efforts mainly focusing on concussions in high school athletics, the efforts to address sport related concussions in younger athletes are unclear. Therefore, the problem is that while researchers know the importance of concussion law in protecting youth athletes and how it has been implemented in high school athletics, there is a gap in the literature regarding how it is being implemented in recreation sport organizations for youth ages 5–14 years or how these organizations are responding to the new law.

Because of this lack of understanding, in this study I focused on the implementation of the Maryland concussion law as it pertains to recreation sport teams for youth, aged 5–14 years in Laurel, Maryland. In this qualitative study, I identified how administrators of Maryland's recreation sport organizations described this implementation. This study provides a deeper understanding of how the law is being put into practice, what may be the barriers to implementation, and what has been effective in implementation. Thus, leaders and policy makers could look to this research for direction in developing policies and practices for implementation of the law necessary to assist youth sport organizations with successful implementation throughout Maryland and beyond. As such, this study has the potential to impact social reform and positive social change across the United States as it pertains to protecting youth athletes on recreation sport teams from initial and repeat head injuries.

In this chapter, I will discuss the process and strategies used to conduct the literature search, including library databases and search engines used and the key search

terms used in the searches. I also discuss the theoretical foundation for the study, which includes the origin of the theory, rationale for the theory choice, and an analysis of how the theory has been applied throughout research similar to this study. A synthesis of the literature reviewed for this study will also be discussed in detail in this chapter.

Literature Search Strategy

I conducted a literature search via Walden University's library and Google Scholar using the following key words: *concussion, youth, education, brain injury, athletes, prevention, implementation, management, states, sports, pediatric, and policy*. I sorted the results of the search by studies that discussed the significance of concussions in youth sports as a problem, followed by studies that provided recommendations to address the problem. The recommendations I identified in the literature to address this problem were education to coaches, parents, and athletes as well as statewide concussion policies that include return to play guidance. I also reviewed the literature on studies that evaluated the effectiveness of both recommendations and analyzed the findings and recommendations of such studies. Additionally, I conducted an extensive review of literature on the Maryland concussion law along with the literature on behavior theories in public health.

The diffusion of innovations theory served as the theoretical framework that guided this phenomenological study examining the implementation of the Maryland concussion law as experienced by administrators of youth recreation sport organizations. The particular emphasis on the process of how the law is introduced and implemented was the focus of this study, and since process is central to the diffusion of innovations

theory, using this theory as a guide was appropriate. This theory was made popular through the works of Everett Rogers. Rogers (1962) described diffusion as “the process by which an innovation is communicated through certain channels over time between members of a social system” (p. 5). Rogers also posited that the spread of an innovation is influenced by “four main elements: the innovation, communication channels, time, and a social system” (p. 10). According to Rogers, in order for the innovation to be self-sustained, it must be widely adopted in a social system, and the process of diffusion of the innovation in a social system is heavily dependent on human capital.

The Maryland concussion policy and its requirements are the innovation that needs to be adopted by youth sport recreation organizations in order for the organizations to adhere to the law and change behaviors so that youth ages 5–14 years old who are a part of these sport organizations can be protected from concussions and their long-term effects. Therefore, a deeper understanding of the process and how this law is being implemented into the community/social system of youth recreation sport organizations is essential to the success of the law/innovation. As such, the diffusion of innovations theory influenced the lens through which I conducted the study and the methodology used to collect data, including tools used and the analysis of the data collected. Finally, the literature review justified the rationale for the study, along with the methodology used in the study, and identified how the study is adding to the current body of literature.

Theoretical Foundation

Theoretical frameworks serve in many domains of public health. For instance, theory informs public health practitioners’ assumptions as they relate to strategies for

intervention (NIH, 2005). Theory can help public health professionals in program design, implementation, and evaluation; public health professionals who ground interventions in theory can design novel ways to address specific public health problems (Glanz, Rimer, & Viswanath, 2008). Further, Painter et al. (2008) suggested using theory in public health serves as a blueprint for studying public health problems, creating suitable interventions, and evaluating their successes. The goal of most public health programs is to “improve the well-being of individuals, families, organizations, and communities and for such efforts to be successful a change in behavior is required at the individual, organizational, and community levels” (NIH, 2005, p. 4). The level of behavior change required is dependent on the level of the public health problem. For instance, in diabetes management, the individual with diabetes will need to change their eating habits, which is an individual behavior. Thus, a public health practitioner looking to develop a diabetes program for individuals with diabetes may use a behavior theory that targets individual behavior change. In contrast, a public health practitioner addressing a lack of physical activity in schools may use a behavior theory that targets groups like communities or organizations. There are also instances in which behavior change may be needed at multiple levels (individual, organizational, or community) in order to be effective. As such, there are a variety of behavior theories used in public health to inform program planning, implementation, and evaluation.

The most commonly used behavior theories in public health are: “(a) health belief model, (b) stages of change model; (c) theory of planned behavior; (d) precaution adoption process model; (e) social cognitive theory; (f) community organization; (g)

diffusion of innovations; and (h) communication theory” (NIH, 2005, p. 5). These theories are important to public health because in order for public health interventions to be successful, they have to have a “clear understanding of the targeted health behaviors and the environmental context in which they occur” (NIH, 2005, p. 4). Theory is a systematic way of understanding a phenomenon through an explanation or prediction demonstrating the relationships between variables (NIH, 2005). As such, the selection of a theory in public health is based on the public health problem and the level of intervention. Thus, if the practitioner is aiming to address a health problem on an individual/intrapersonal level, interpersonal level, or on the community level, he or she would have to determine which behavior theory would be most applicable (Glanz et al., 2008).

For instance, if trying to address a behavior change on an individual level, a public health practitioner may use the health belief model or use the social cognitive theory to address behavior change on an interpersonal level (NIH, 2005). On the other hand if public health practitioners are trying to address behavior change on a community level, they may use the community organization theory or the diffusion of innovations theory (Painter et al., 2008). In public health practice, addressing a community level problem requires taking into consideration institutional and public policy components, as well as the community factors like social networks and norms’ influences on behavior (Glanz et al., 2010). This is because community level theory models “address individual, group, institutional, and community issues” (NIH, 2005, p.22).

Although communities may often be recognized for geographical location, they can also be defined by other standards such as communities of shared interests, shared cultures, or collective identity (NIH, 2005). As such, youth sport recreation organizations fit the definition of a community based on the shared sports interests of youth ages 5–14 years old. To implement the concussion law as the public health intervention to address the problem of concussions in youth ages 5–14 years old requires a community-level theory to inform such intervention planning, implementation, and evaluation of the Maryland concussion law. The law as an intervention focuses on increasing awareness of concussions, management, and treatment. In essence, the behavior change intended by the law is to educate parents, coaches, and players on how to recognize a concussion, manage a concussion, and adhere to return to play guidelines in order to reduce the number of concussions and the long-term effects of concussions in youth athletes (Crutchfield, 2011).

The diffusion of innovations theory served as the framework for this study because it is a behavior model theory that places specific importance on the process of how the innovation/intervention is introduced and implemented (Painter et al., 2008). This theory was made popular by Everett Rogers, a professor of communication studies that described “diffusion as the process by which an innovation is communicated through certain channels over time and among members of a social system” (Rogers, 1962, p.10). The origin of this theory is varied and crosses numerous disciplines. Rogers (1962) identified six main disciplines that impacted diffusion research. According to Rogers, diffusion research began in “anthropology, early sociology, rural sociology, education,

industrial sociology, and medical sociology” (p. 42). Rogers further stated, “the diffusion of innovations theory purports that there are four main elements that influence the spread of a new ideas; the innovation, communication channels, time, and a social system” (p. 10). Rogers (1962) contended process is central to the diffusion of innovations theory, that the process is heavily dependent on people, and that the innovation must be broadly adopted in order to stay the course and be sustained. According to Rogers, diffusion of innovations is revealed differently in diverse cultures and fields and is highly dependent on the type of people adopting the innovation as well as the innovation decision process. Rogers further identified categories of adopters who are pertinent to this theory: “innovators, early adopters, early majority, late majority, and laggards” (p. 241). Thus, adopters play an essential role in the diffusion process.

Additionally, Rogers suggested the diffusion of innovation occurs through a five step/stage process, and “the process is a type of decision making that occurs through a series of communication channels over a period of time among members of a similar social system” (p. 10). Rogers initially identified the 5-steps/stages in the process as awareness, interest, evaluation, trial, and adoption (Rogers, 1962). However, in his later work Rogers (2003) changed the terminology of the five stages to knowledge, persuasion, decision, implementation, and confirmation, but the descriptions remained the same. Rogers was also careful to distinguish between diffusion and adoption of an innovation. Adoption pertains to an individual, and the adoption process is defined as “an individual process detailing the series of stages one undergoes from first hearing about a product to finally adopting it” (Rogers 1962, p. 134). The diffusion process is representative of a

group of phenomena and encompasses the adoption process of several individuals over time, thus suggesting how an innovation spreads among consumers (Rogers, 2003). The spread of innovation has been applied throughout the literature in a variety of areas such as the spread of technology, clinical practice, new ideas, policy, or program (Greenlough, Robert, MacFarlae, Bate, & Kyriakidou, 2004; Harringer, 2014; Sharma & Kanekar, 2014). Essentially, the theory of diffusion has been and can be applied to the process of implementing new knowledge into practice, whether it is a technology, medical treatment, policy, program, idea, or intervention (Greenlough et al., 2004; Harringer, 2014; Sharma & Kanekar, 2014).

Historical Application of Theory

Rogers combined research from more than 508 diffusion studies and created a theory useful for adopting innovations. Prior to Rogers, the concept of diffusion was first studied by German and Austrian anthropologists Friedrich Ratzel and Leo Frobenius and French sociologist Gabriel Tarde in the late 19th century (Rogers, 2003). Tarde's work was in the field of sociology, and he believed social change requires penetration of inventions that diffuse through the process of imitation (Rogers, 1962). The concept of diffusion in terms of cultural diffusion and the influence of environment and cultural trait were studied by anthropologist Roland Borage Dixon, while examples of institutional diffusion were explored by H. Earl Pemberton (Rogers, 2003). Rogers built his work on these and other previous studies on diffusion. For example, Rogers's first book on this theory was published in 1962 and now is in its fifth edition. Initially, this theory was used to explain how, why, and at what rate new innovations diffuse through cultures (Rogers,

2003). However, since then, this theory has been applied in over 5,200 studies in various fields (Rogers, 2003).

This is because the hallmark of this theory is that it deals with the adoption of “new ideas by people in a systematic manner” (Rogers, 1962, p. 10) and thus can be and has been used in multiple fields. For instance, in the field of public health, health promotion, and health education, it was first applied to vaccine campaigns and family planning programs (Sharma, 2014). It has also been used in health service delivery (Greenlaugh et al., 2004) and public policy (Stone, 2004). In healthcare settings, Carlford, Lindenberg, Bendsten, Nilsen, and Anderson (2013) used the diffusion of innovation theory as a framework in a study around bridging the gap between transferring knowledge into practice. The theory was applied to identify key factors that influenced the adoption of innovations in healthcare settings. Carlford et al. used a qualitative approach to explore the factors influencing implementation and adoption of the innovation and found that when planning the implementation of an intervention or new tool, “an assessment of the expectation of those involved, assessment of the perceived need for innovation, and its potential compatibility with existing routines” (p. 77) should be considered. Carlford et al.’s study, like my study, also utilized a qualitative approach based on the diffusion of innovation theory.

Nicol et al. (2011) also used the diffusion of innovations theory to explore best practice recommendations in health and implementation into clinical practice. The diffusion of innovation theory was used to illustrate “the successful implementation of a best-practice glucose screening program in a large network of community mental health

clinics” (p. 1). The study used the diffusion concepts to recognize problems and create inventive approaches for implementation but with the focus on rapid quality improvement. The findings in the study suggested that “quality improvement approaches may help to address the gap between policy and implementation” (Nicol et al., 2011, p. 3); Thus, using the diffusion of innovations theory to assess implementation. This study similarly uses the diffusion of innovations theory to assess the implementation of a new policy.

Another example of the application of diffusion of innovations theory is in tobacco, drugs, and alcohol policies. Its application in tobacco control as well as alcohol and drug control was seen from two levels in a study by Sharma and Kanekar (2008). The first was pertaining to “the adoption and diffusion of the habit of using such substances and the second level pertained to the diffusion of successful interventions in prevention and control of tobacco, alcohol, and drugs” (p. 4). The application in prevention is the “diffusion of policies regarding tobacco, drugs, and alcohol control among public health agencies” (p. 5).

Harringer (2014) used the diffusion of innovations theory as the framework to examine the literature on school wellness policy (SWP) implementation. In Harringer’s study, one of the first innovative and extensive actions by the United States government to address the child obesity epidemic and the influence of the school environment on child health is examined. The SWP was mandated by the U.S. government as an intervention to address childhood obesity. However, there was no systematic review conducted to examine the implementation of this policy. As such, in this study,

“empirically based literature was systematically searched and analyzed and a theory driven approach was used to categorize the articles into four diffusion stages; restructuring/redefining, clarifying, routinizing, and multiple stages” (Harringer, 2014, p. 276).

Harringer found that there was no uniformed methodology, analysis of the policy implementation process, or information to clarify the policy and only one article with specific theoretical framework to study constructs that were driven by theory related to SWP implementation. Thus, concluding that because policy implementation research can inform the policy process, it is important to measure policy implementation correctly and if the implementation concepts are not well-defined it could result in erroneous conclusions. (Harringer, 2014). Like the SWP, there has been no systematic review conducted to examine the implementation of the varying state concussion laws. Examining how such laws are being implemented is essential to the implementation and success of concussion policy as an intervention. Thus, the appropriateness to utilize the diffusion of innovations theory as a theoretical framework to examine the implementation of the Maryland concussion law in youth sport recreation organization is appropriate.

Green, Ottoson, and Garcia (2009) addressed the problem of implementation through using diffusion theory to explore knowledge dissemination, utilization, and integration in public health. The purpose of the study was to address the concerns of legislators, scientific beneficiaries, practitioners, and the public pertaining to the implementation of evidenced-based best practices. Green et al. explored how the knowledge and best practices that resulted from scientific research was reaching the

intended audience and the barriers to the implementation of such best practices. Using the diffusion of innovation theory, they compared diffusion, dissemination, and implementation with similar concepts from other fields in bridging the gap between science and practice. The study suggested diffusion relates to uncontrolled natural spread, while dissemination is the conscious effort to spread new information and practices to a specific audience or to the general and that successful implementation depends on other factors other than diffusion and dissemination. The study looked broadly at how public health information is disseminated and then implemented into practice, which is relevant to the current study. As this study explores how the Maryland concussion law (a public health policy) is disseminated and implemented in a specific population the diffusion of innovations theory served as the theoretical framework to guide the study in terms of research questions, methodology, data collection, and analysis.

Rationale for Theory Choice

The Maryland concussion legislation became law in June 2011 and its aim is to protect youth athletes from concussions and their long term effects (CDC, 2013) through behavior change in the community of youth sports. This law like the similar laws in many other states requires coaches, parents, school personnel, and athletes to receive concussion education and change their behavior by adhering to return to play guidelines in order to prevent, identify, and manage concussions appropriately (Schatz & Moser, 2011). Studies have called for an assessment of the effectiveness of such laws to determine if the number of concussions and severity has decreased along with increased concussion awareness and management in youth athletes since implementation

(Shenouda et al., 2012). However, since the law is new, there isn't much literature to support the inference that as a result of its implementation, there has been a decrease in the number of concussions in youth athletes or that parents, coaches, and school personnel are more aware and better able to manage concussions (Shenouda et al., 2012). Thus, with the law being in its infancy stage it is important to explore the process of how the law was disseminated and implemented in the community of youth sport recreation organizations. The purpose would be to identify barriers and supports to implementation to inform policy makers and administrators as to the effectiveness of this policy, as well as to provide standards and guidance for implementation to future implementers of similar policies. As such the entire implementation process of this policy needs to be explored.

The study proposes to explore the implementation of the Maryland concussion policy in youth sport recreation organizations from the perspectives of those responsible for implementation and most impacted by implementation. The requirements of the Maryland concussion law are for such organizations to ensure their coaches, parents, and youth athletes receive concussion education and follow the return to play guidelines. As such, this research is employing a qualitative approach to exploring how the new policy was disseminated to such organizations and how such organizations implemented the policy and its requirements. According to Green et al. (2009) in public health the diffusion of innovations theory is primarily concerned with the what and how of dissemination efforts to spread new information and practices to the public or a targeted population; specifically the how the efforts are communicated as well as the

implementation of such efforts. Implementation in terms of adoption of the new practice and adherence to the new policies is part of the diffusion process, thus using the diffusion of innovations theory to identify the barriers to dissemination and implementation is appropriate (Green et al., 2009). Figure 1 provides an example of how diffusion of innovations theory applies to this study. Additionally, Nicol et al. (2011) used the diffusion of innovation theory to explore the gap between policy and implementation, again identifying barriers to successful implementation as well as facilitators of successful implementation.

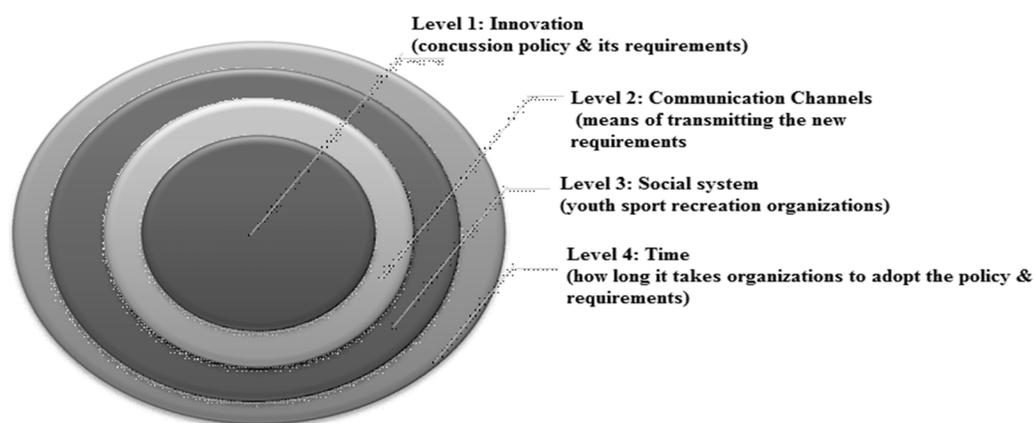


Figure 1. A diffusion of innovations model for understanding implementation of the Maryland concussion law.

The concept of the diffusion of innovations theory is to examine the nature of social intervention with particular emphasis on the process of how it is introduced and implemented (Rogers, 2003). As such, it has been used in variety of disciplines and applied to new ideas, practices, programs, policies, and technologies (Dearing, 2014). Despite the discipline and area of application, process has been central to the diffusion of innovations theory (Dearing, 2014). According to Harringer (2014) measuring policy implementation accurately is essential to informing the policy process and as such utilized the diffusion of innovations theory to explore the implementation of school wellness policies. Like Harringer, the use of the diffusion of innovations theory to explore the implementation of the Maryland concussion law is appropriate. Process is central to this theory and diffusion is the process by which an innovation is disseminated over time in a community (Rogers, 2003); thus exploring the process in which the Maryland concussion law is implemented in the social system/community of youth sport recreation organizations is best explored through the theoretical framework of the diffusion of innovations theory. In order to identify the barriers to successful implementation and factors that contribute to successful implementation of the law it is important to explore the entire implementation process including the four elements identified by Rogers that influence the spread of the new idea.

According to Rogers (1962), “the innovation, communication channels, time, and the social system influence the spread of new ideas and play an important role in the process” (p.10). Thus, exploring each of these elements and their role in the implementation of the new law may result in findings that can inform the body of

literature, policy makers, administrators/decision makers, and future implementers to improve design in order to foster successful implementation. For instance, the research question being asked was informed by this existing theory. The central research question to be answered in this study is how is the Maryland concussion law being implemented in recreation sport organizations for youth age 5–14years old? The subquestions being asked are: What are the identified barriers to implementing the requirements of the Maryland concussion law in recreation sport organizations for youth age 5–14years old and what are the elements that support successful implementation of the Maryland concussion law in recreation sport organizations for youth age 5–14years old? By exploring the implementation process of the Maryland concussion law, the data collected and analyzed will produce findings that identify, describe, and explain, the important elements of the implementation process that fosters successful implementation or serves as a barrier to implementation. Thus, answering the listed research questions.

Literature Review Related to Key Concepts

There have been several interventions to address this public health problem of concussions in youth athletes. Interventions range from new safety rules, protective equipment, and education to coaches, athletes, and parents, and state concussion policies (IOM, 2014). The state of Maryland chose to implement a statewide concussion law as the method of intervention to address concussions in youth athletes in Maryland. The Maryland Concussion Law “Education-Public Schools and Youth Sports Programs-Concussions” was signed into law on May 19, 2011 to protect the state’s youth athletes from the dangers of a concussion. This study explored the implementation of the

Maryland concussion law in youth recreation sport organizations for youth, aged 5–14 years. As such, the constructs of interest in the study were how the new law and its' requirements was and is being communicated to such organizations and how these organizations are implementing the requirements of the law within their organizations. These constructs were chosen to identify and explain barriers to implementation as well as facilitators of successful implementation in order to inform policy makers and future implementers of this policy.

Given the constructs, I conducted a review of the literature on implementation to identify an appropriate methodology for this study. In implementation studies with similar constructs, I identified qualitative approaches to exploring policy implementation as the dominant methodology used (Mullens, 2011; Rawson, 2011; Macy, 2009; Gustama, 2013). For instance, Gustama (2013) used a qualitative design to explore policy failures and possible solutions for successful implementation. Macy (2009) conducted follow up interviews with participants that were identified as smokers prior to implementation of tobacco control policies in Texas to determine if and how the smoking policies influenced their attitudes and behaviors towards quitting smoking. Rawson (2011) also utilized a qualitative approach to explore the barriers and facilitators to implementation of a healthy aging policy. Like this study Rawson, was seeking to identify the barriers to fully implementing a public policy in an organization as well as factors that influence successful implementation of such policy.

In addition to Mullens, Rawson, and Gustama, there were additional studies that supported the decision in this study to utilize a qualitative methodology to explore the

implementation of Maryland's concussion law in youth sport recreation organization for youth, aged 5–14 years. A qualitative method was appropriate because it provided an opportunity for the administrators of such organizations that are responsible for implementation and impacted by the implementation of the law to describe their experiences. The utilization of this method in similar studies was supported by the literature. For instance, Evenson et al. (2013) explored the implementation of the United States National Physical Activity Plan (NPAP) through a qualitative study interviewing 27 state practitioners from 25 states to examine the "state public health practitioners awareness, dissemination, use, challenges, and recommendations for the NPAP" (p. 2). While the policy being examined in Evenson's study is different from the current study, the constructs are the same, thus making the methodology appropriate. Hanbury, Farley, Thompson, Wilson, and Chambers (2012) also used a qualitative approach to identify and explore factors that influence adoption of innovations. Specifically, Hanbury et al. presented a case study of the process but warns that while a case study may be programmatically feasible for a single study, it may be less realistic for implementation on a larger scale. Given that the policy being explored in the current study is a statewide policy and the warning by Hanbury et al., a phenomenological approach was used in this qualitative study. Carlford et al. (2010) explored dissemination and implementation of innovations in primary care settings through a qualitative study. Specifically focus groups and individual interviews were conducted to identify the factors that influence adoption of an innovation and barriers to adoption from the perspectives of the organization's practitioners. Again, the constructs in Carlford's study is similar to this study in the

respect that the concussion law is an innovation in youth sports and youth sport recreation organizations is the setting in which the innovation is being implemented. Thus, using the approach in Carlford's study was appropriate to this study.

In the literature analyzing policy implementation, whether it's a federal policy, state policy, program implementation or implementation of a innovation in a healthcare organization, local government, schools, or community the common constructs have been exploring the process and identifying the barriers and facilitators to implementation (Evans, 2013; Liu, 2012; & Rawson, 2011). The common methodology I identified have been a qualitative approach including focus group or individual interviews, semi-structured interviews, observations, document review, and in some instances case studies (Gustama, 2013; Evenson et al., 2013; Hanbury et al.; 2012; Carlford et al.; 2010). Throughout the literature, implementation has been approached from varying perspectives. However, it appears to have consistently been approached from an evaluation perspective. The variation is in if it was used to evaluate the effectiveness of a program, process, intervention, policy, or any change to a current technique (innovation). For instance, May (2013) evaluated implementation as a process. The strength in this approach was that according to May implementation of any sorts whether it was of a clinical intervention, a policy, or a program is a complex intervention. This is because it requires collective, coordinated, and cooperative actions with many groups from varying social systems and should be understood as a process that is continuous and interactive from the beginning (May, 2013). May suggests that evaluating implementation as a

process allows researchers and practitioners to “identify, describe, and explain important elements of implementation processes and their outcomes” (p.3).

May’s approach was based on the theoretical claim that social and cognitive processes of all kinds involve social mechanisms and social agents within a system. May defines mechanism as “a process that brings about or prevents some change in a concrete system” (p. 3) and agents as “individuals or groups that interact with each other” (p. 3). May further states that an agent’s ability to make things happen through their own actions is defined as expression of their agency and in order for this to happen it involves interaction with other agents and processes. A potential weakness in May’s study is that it involves evaluating a process that is based on the interaction with other agents and processes, which may influence the evaluation of the specific implementation process being evaluated. However, this approach also takes into consideration the agents’ constructs of capability, capacity, potential and contribution and these constructs are the set of mechanisms that energize and shape the implementation process (May, 2013).

Renger, Bartel, and Jirinia, (2013) approaches implementation as the evaluation of program implementation. The strength of this study is that it doesn’t only evaluate program activities because it recognizes it is difficult to determine if failure or success of a program is due to design of the intervention or the program was not delivered according to the implementation plan. Thus, addressing that while the implementation may pertain to program activities, it is deeper than simply the steps of an activity but rather the implementation process as a whole. Renger et al. recommended that decision makers evaluate the implementation process in order to identify the successes and failures of

program implementation. According to Robichau and Lynn (2009) the public policy process can benefit from the implementation process. Robichau and Lynn suggest that the implementation of public policy should take into the consideration outcomes and outputs in their design by identifying outputs as the work that is done and outcomes as how it is done. The study's strength is in identifying the importance of evaluating how a public policy is implemented and what is done in the process of implementing the policy. Like Robichau and Lynn, Hanbury et al. (2013) and Carlford et al. (2013) also analyzed implementation. However, Hanbury et al. and Carlford et al. explored implementation of an innovation or intervention in the clinical setting but also found that it is how the intervention/innovation is implemented that impacts the effectiveness of such implementation.

The consistent theme I identified in the literature when analyzing implementation whether it is a policy, process, program, or any intervention/innovation, was that identifying how it was implemented is important. As such the concepts of choice for the current study to explore is how the concussion law is being implemented and the barriers to implementation, as well as factors that facilitate successful implementation is justified (Rawson, 2011; Gustama, 2013; Hanbury et al., 2013; & Evenson et al., 2013). The implementation of concussion laws as an intervention to address concussions in youth athletes is a relatively new phenomenon (Shenouda et al. 2012). Since 2009, all 50 states and the District of Columbia have a variation of concussion laws, policies, or statutes (IOM, 2014). However, 39 of these laws were passed between 2011 and 2013 (IOM, 2014). Thus there is little in the literature on the effectiveness of such intervention or its

implementation (IOM, 2014); According to the Institute of Medicine (IOM) “no comprehensive evaluation of the implementation and efficacy of these laws or their specific provisions has yet been published” (p. 269).

Shenouda et al. (2012) was the first study to address the implementation of state concussion policy. Shenouda et al. evaluated the impact of Lystedt Law in Washington State, the first state to implement statewide concussion law. Shenouda et al. evaluated the impact of the law a year post implementation and found that while the general concussion knowledge of soccer parents, coaches, and referees were high, there remained a gap in knowledge and practice. In the evaluation study of concussion laws in Washington and Massachusetts, the CDC (2013) assessed implementation efforts, challenges, and successes in order to inform implementation in other states. This study highlighted the importance of assessing the effects of the law, which involves identifying barriers and facilitators to implementation. The study also reported that communication with recreation leagues was also identified as a factor that is important to successful implementation, and thus recommends further investigation into recreation sport organizations as it relates to the implementation of state concussion policies (CDC, 2013).

Essentially, there is a variation of concussion policies in all states and how the laws are being implemented also vary (IOM, 2014). This variation in addition to the lack of literature on the implementation of these policies leaves much more to be studied on the impact of these laws, specifically how they are being implemented in states and what are the factors that are influencing successful implementation as well as the barriers to

implementation (IOM, 2014). In addition to the IOM report on the lack of published literature on the implementation of state concussion laws and the CDC's recommendation to further investigate the impact and effectiveness of concussion policies, the literature support in implementation studies is supportive of the current study's intended research to explore how the Maryland Concussion law is being implemented in youth recreation organizations for youth age 5–14 years old and to answer the additional research questions; what are the barriers to implementation and what are the factors that influence successful implementation? Similar research questions were asked in relation to the implementation of healthy aging policy in suburban planning and transportation departments (Rawson, 2011). Gustama (2013) also asked these questions while exploring policy implementation problems and solutions. So did Hanbury et al. (2012) and Carlford et al. (2010) while exploring the implementation of new interventions in clinical practices. In policy implementation, Evans (2013), Evenson et al. (2013), Liu (2012), Mullens (2011), and Macy (2009) all indicated identifying the barriers and challenges to successful policy implementation were the key questions that needed to be answered in evaluating, analyzing or exploring implementation. Thus, exploring how the Maryland concussion law is being implemented in youth recreation sport organizations, identifying the barriers to the implementation and the facilitators of successful implementation are appropriate concepts to be studied.

Summary

Answering the research questions would provide information that adds to the body of knowledge related to the implementation of concussion policies. Specifically, the

study will provide information on how concussion policies are implemented, if the intent of the policies is being met, and how youth athletes, age 5–14years old in youth recreation sport organizations are impacted by such policies. In the current literature little is known on the implementation of concussion policies in general, and there is no literature on concussion policies being implemented in youth sport recreation organizations that serve youth age 5–14years old. This information is of particular value, since most youth athletes begin participating in sports through youth sport recreation organizations as early as age 5 (Shenouda et al., 2012). In the current literature, the focus on youth concussions has been on high school athletics despite data that youth athletes age 5–14years old are at risk for concussions at a similar rate as high school athletes and often suffer more severe consequences than high school athletes (Schatz & Moser, 2011). Therefore, for administrators, athletic organizations, parents, athletes, policy makers, public health practitioners, and other decision makers that are concerned with keeping youth athletes safe, the data from this study will be used to inform them in policy making, program planning and implementation to foster behavior change. This study also has the potential to impact implementation of interventions or innovations in similar disciplines like public policy, public health, and sociology. For instance, in the literature review there was not much known about the implementation of concussion policies because these policies have not been in place very long. The first concussion policy was implemented in 2009 in the state of Washington and last in 2014 (IOM & NRC, 2014). As such, the research that has been done has been on the implementation of such policies in high school athletics and there is not much known of the implementation of such

policies in sport organizations that are not high schools, like youth recreation sport organizations that serve youth, aged 5–14 years (IOM & NRC, 2014).

In the literature it is known that providing concussion education to coaches, parents, sport officials, and athletes have increased concussion awareness in those educated but there is no evidence that behavior has changed as a result of the education (Shenouda et al., 2012). What is also known is that there is some form of a youth concussion policy in all 50 states and the District of Columbia (IOM & NRC, 2014). Yet it is unclear how these laws are being implemented. Thus, indicating a gap in the literature on the implementation of youth sport concussion policies and their impact. With limited to no literature on the implementation of youth sport concussion policies, a literature review of the implementation of public interventions was conducted and produced a variation of studies including implementation of a program, new knowledge, clinical practice, or policy in public health to improve the health of individuals and communities (NIH, 2005). The major theme that emerged in the literature review of the implementation of public health interventions was the emphasis on the process of implementing the intervention (Carlfjord et al. 2010; Green et al. 2009; Harringer, 2014; Nicol et al. 2014). This included the importance of identifying the problem to be addressed, planning for how to address the problem and taking into consideration factors that can influence the proposed intervention, the implementation of the intervention, and an evaluation of the intervention and the process (Carlfjord et al., 2010; Green et al., 2009; Harringer, 2014; Nicol et al., 2014).

To address the gap in the literature of the implementation of youth sport concussion policies, a study exploring the process of how the concussion laws are being implemented is needed; particularly how the law is being implemented in organizations for youth athletes that are not in high school. Therefore this study to explore how the Maryland Concussion law is being implemented in youth recreation sport organizations for youth age 5–14years old is needed. The information will be used to fill the current literature gap and to inform policy makers, public health practitioners, and future implementers of similar policies. For instance, the results of the study can provide guidance and standards for implementation of concussion policies. Additionally because this study will explore the process of the implementation of the law from the perspectives of those involved in implementation and directly impacted by the implementation, it brings a unique perspective to identifying barriers to implementation as well as facilitators of successful implementation.

This qualitative approach to exploring the implementation of concussion policies will further address the gap in the current literature. The current literature provides quantitative information on the implementation of concussion policies, like the number of states that have polices, a comparison of the variation of policies but there is limited qualitative data on the implementation of the policies (Children’s Safety Network, 2013). Without qualitative data on the implementation of concussion policies, the gap in the literature will remain. This study will be taking phenomenological method of inquiry to explore the implementation of the Maryland concussion policy as experienced by those

responsible for implementing the requirements of the law and that are most impacted by the law.

The phenomenological method of inquiry provides an opportunity to ask open ended questions that allows administrators of the youth sport recreation organizations to describe their experiences in implementing the requirements of the Maryland concussion law in their organizations, including what strategies have been successful and what needs improvement. By conducting semi-structured interviews with such Administrators, recording their answers, and reviewing and analyzing the data for common themes, will produce findings that identify barriers to successful implementation as well as facilitators of successful implementation of the Maryland concussion law. Therefore, using a qualitative methodology to conduct this study was most effective in answering the research questions and producing findings that will fill the gap in the current literature. As such, the methodology along with the findings of this study will describe and explain how the Maryland concussion policy is implemented in youth sport recreation organizations thus filling this gap in the literature by adding knowledge on how the policy is implemented as well as in a population (youth age 5–14years old) that were not addressed in previous studies on the implementation of concussion policies. The next chapter will provide an introduction into the methodology used in this study along with a description of the research design and rationale, the role of the researcher, the methodology, issues of trustworthiness, and a summary of the chapter.

Chapter 3: Research Method

Introduction

For the more than 38 million children and adolescents who participate in organized sports each year, their chances of sustaining a concussion are high (Daneshvar et al., 2011). Additionally with approximately 172,285 visits to the ED by youth ages 0–19 years old as a result of a sports-related concussion (Gilchrist et al., 2011), all 50 states and the District of Columbia have implemented a variation on concussion policies to sports-related concussions in youth athletes (IOM, 2014). For instance in the state of Maryland the concussion law, Education-Public Schools and Youth Sports Programs-Concussions, was signed into law on May 19, 2011 to protect the state’s youth athletes from the dangers of a concussion. However, since the implementation of this policy in the other 49 states and the District of Columbia, there has not been a comprehensive evaluation of such policies, including their implementation and effectiveness (IOM, 2014). As such, with Maryland being one of the states with a more comprehensive concussion policy, this study explored the implementation of the Maryland concussion law in youth recreation sport organizations for youth, aged 5–14 years. This study focused on how the new law and its requirements are being communicated to youth sport and recreation organizations and how these organizations are implementing the requirements of the law within their organizations. The purpose of the study was to identify and explain barriers to implementation as well as facilitators of successful implementation in order to inform and provide guidance on implementation to policy makers and future implementers of this policy.

This chapter will restate the research questions, define the central concept/phenomenon of the study, identify the research tradition, and provide a rationale for the chosen tradition. This chapter will also discuss the role of the researcher in the study, the study's methodology, and any issues of trustworthiness. Finally, this chapter will conclude with a summary of the major points of the chapter.

Research Design and Rationale

The central research question answered in this study was, how is the Maryland concussion law being implemented in recreation sport leagues for youth age 5–14 years old? This phenomenological study was based on the experiences of administrators of recreation sport leagues for youth age 5–14 years old in the state of Maryland. In addition to the central question, there were additional questions the research answered. These subquestions were:

1. What are the identified barriers to implementing the requirements of the Maryland concussion law in recreation sport leagues for youth age 5–14 years old?
2. What are the elements that support the implementation of the Maryland concussion law in recreation sport leagues for youth age 5–14 years old?

These research questions are applicable in exploring the central concept/phenomenon of the study. The central concept/phenomenon of the study is the implementation of the Maryland concussion law requirements in youth sport recreation organizations. More specifically, I explored how this new law and its requirements are being communicated to youth sport recreation organizations that serve youth age 5–14

years old and how these organizations are implementing such requirements in their organizations. Maryland's concussion law, along with laws in the other 49 states and the District of Columbia, is new and as such limited research has been conducted on the implementation of such policies. However, in the limited research that has been conducted, the approach to study the implementation of these policies has been largely qualitative.

For instance, a few studies have evaluated different components of various state laws, but there is only one study that addressed the implementation of state concussion policies and their requirements comprehensively. The CDC (2013) referred to varying state concussion laws collectively as "Return to Play" in their study that assessed the implementation efforts of these laws in the states of Washington and Massachusetts. The CDC chose these two states because they were early implementers of Return to Play and because these laws varied and were similar in some aspects. The CDC conducted a case study evaluation on the efforts in these two states in order to assess the implementation efforts, including the challenges and successes in implementation. Interviews were conducted with several officials at state health departments, statewide interscholastic Athletic Associations, and school level athletic directors and coaches. The CDC then analyzed the results from the interviews and identified common themes between and across the groups interviewed. Interviews were selected as the appropriate method because it allowed for a synthesis of the opinions and experiences expressed by those interviewed in order to present lessons learned and recommendations around the implementation of Return to Play.

While comprehensive data on the implementation of concussion policies is limited, there is data on statewide implementation of varying public policies that this study reviewed, majority of which employed qualitative method of inquiry into the implementation of such policies. For instance, a case study approach was used by Gustama (2013) in exploring policy implementation problems and solutions. Rawson (2011) also used a qualitative case study approach to explore barriers and facilitators of the implementation of healthy aging policy in suburban planning and transportation departments in Strathcona County. In addition to public policy implementation, qualitative approaches were also used in other implementation studies. For instance, Evenson et al. (2013) conducted in-depth interviews with state public health practitioners in 25 states on the U.S. National Physical Activity Plan (NPAP). The purpose of the study was to examine public health practitioners' awareness, dissemination, use, challenges, and recommendations for the NPAP. The interviews were recorded and transcribed and put into qualitative software to identify the common themes associated with implementation of NPAP.

In another study exploring barriers to the application of research based recommendations into practice, theory informed questionnaires along with qualitative interviews were used to identify such barriers (Hanbury et al., 2012). Carlford et al. (2010) also conducted a qualitative study to identify key factors influencing adoption of an innovation in primary care. Thus, whether it was examining the implementation of state concussion policies, other public policies, implementation of a national plan, or implementation of research based recommendations or new innovations into practice,

qualitative approaches were deemed most appropriate by such researchers. Additionally, Creswell (2007) suggests qualitative research needs to be conducted when a phenomenon needs to be explored. As such, in this study exploring the implementation of the Maryland concussion policy in youth sport recreation organizations a qualitative method of inquiry is most appropriate and was used in this study. In addition to the use of qualitative approaches used in these implementation studies, another theme identified in these implementation studies that used qualitative approaches was that their approaches were theory informed (Hanbury et al., 2012). For instance, Evenson et al. (2013) used the diffusion of innovations theory to guide the study and used a qualitative method of inquiry in the study. Harting et al. (2009) also used the diffusion of innovation theory to guide their study and also used a qualitative method of inquiry to examine the determinants of guideline compliance among physical therapists.

Evenson et al. (2013) study is similar to this study in that it was examining awareness, dissemination, use, challenges, and recommendations of implementation for a national plan as experienced by practitioners responsible for implementing the requirements of the NPAP. As Evenson et al., conducted in depth interviews with these practitioners, in this study I conducted in depth interviews with administrators of youth sport recreation organization administrators to explore the implementation of the Maryland concussion law in such organizations. As this study is seeking to identify how the Maryland concussion law and its' requirements were communicated/disseminated to such organizations, organizations' awareness of the new law and its' requirements, how the organizations are implementing the requirements, the barriers they experienced

implementing such requirements, and what factors influence or is needed for successful implementation, a qualitative approach is appropriate. This phenomenology approach allows the administrators of youth sports recreation organizations to describe their experiences with the implementation of the law. According to Creswell (2007) a phenomenological study describes the meaning of a phenomenon/concept as experienced by several individuals. The essence of phenomenological studies is to describe the common factors of each individual's experience to result in a combined depiction of the core of the experience for all of the individuals (Creswell, 2007). This includes an account of what they experienced and how they experienced it (Creswell, 2007). As such, a qualitative study using a phenomenological approach inclusive of In-depth interviews with those responsible for implementing the law in such organizations is needed to fully explore the implementation of the law in such organizations. Thus, I chose to use a qualitative approach in this study which was supported by the many studies exploring implementation to identify barriers to implementation and factors that facilitate successful implementation (Gustama, 2013; Evenson et al., 2013; Hanbury et al., 2012; Rawson, 2011; Carlford et al., 2010).

Role of the Researcher

My role in this study was as an observer to recruit and interview the participants of this study. In addition to the data collected from the interviews I also reviewed the policies and procedures of the youth sport recreation organizations in the study. As the primary data collector in this study building relationships with the participants of these organizations was important. As a parent of youth athletes and a prior coach of recreation

youth sports in Laurel, Maryland where the study was conducted and where participants were selected, I already had a relationship with a few of the organizations from which participants were selected. As a parent of two youth athletes that participate in sports that are part of youth sport recreation organizations in the state of Maryland I am familiar with a few of the youth sport recreation organizations, their policies and procedures, and some staff. However, the relationships with such organizations are both personal and professional but do not have any power over participants. As the participants are administrators of such organizations and the relationship I have with some of the organizations are with the coaching staff, therefore the potential of influence is nonexistent. Serving as a previous coach in some of the organizations allowed me to gain easier access to the organizations to recruit participants. However, I had no influence on the participants' decision to participate or on responses to interview questions. It is important to note that as a previous public health administrator of a Federal Traumatic Brain Injury program I was very familiar with the concussion policies in various states. In fact, I was a member of the Institute of Medicine's (IOM) Task Force on youth sport concussions. In the role as a public health administrator my professional relationship was with the state department of health and mental hygiene not the department of sports and recreation that oversees the various youth sport recreation organizations. Therefore, I had no professional influence on the participants.

Potential for Bias

While my relationship with some of the organizations did not influence the participants there may be a potential for bias. As a parent, traumatic brain injury professional, and coach of youth sports there may be bias in how the research questions are developed, asked, recorded, and interpreted. However, there were measures in place to minimize the potential for bias. According to Creswell (2007) biases can be minimized by employing a strategy of full disclosure. As recommended by Creswell (2007), I stated the potential for bias in the beginning of the study so that that the reader is aware and understand any bias that may have shaped or impacted the approach or interpretation of the study. Additionally, Patton (2002) suggested that the data collection tool influences the quality of the data collected and the analysis and recommended minimizing the influence of researcher bias on data collection and analysis. To minimize this limitation, I employed the techniques of member checking and peer debriefing to ensure the collection of quality and unbiased data.

Ethical Concerns

In addition to the potential for bias, there were also ethical concerns to consider. To minimize any potential ethical concerns, approval to conduct this study was requested from the Institutional Review Board (IRB) at Walden University. The IRB reviewed the request and was satisfied that I was abiding by the research code of ethics when using human subjects, and permission was therefore granted (Walden, 2015). Once IRB approval was granted to begin the study, I began recruiting participants. Prior to conducting interviews I used an interview protocol to inform the participants of the

purpose of the study and interview, the process, and their rights including their right to withdraw from the study at any time and their right to confidentiality (Creswell, 2007). I also collected signed informed consent from all study participants, approval from the organizations, and approval from Walden Prior to conducting the interviews. I informed all participants that notes will be taken during the interviews and the interviews will be recorded for use in the study and that all data collected will be kept confidential and in a secure location. By keeping all documents confidential, providing an adequate informed consent, and complying with the IRB rules, any potential ethical concerns were minimized.

Methodology

The population of interest in this study is youth sport recreation organizations in the state of Maryland. These organizations are home to youth, aged 5–14 years that participate in organized team competitive sports and their administrators are responsible for implementing policies in the organizations. As such, administrators of these youth sport recreation organizations are the targeted participants. However, because the capability to gather data from all individuals covered by a research phenomenon may often be impractical, expensive, and time consuming Frankfort-Nachmias & Nachmias, (2008) recommends a sampling strategy and sample size that will allow results that can be generalized or transferred to a larger population. As such, I purposefully selected the sample size for this study using the criterion sampling strategy (Patton, 2002). The specific criterion is that participants have to be an administrator of a youth sport recreation organization in Anne Arundel, Howard, or Prince George's (P.G.), in Laurel,

Maryland since the implementation of the Maryland concussion legislation in July 2011. A list of youth sport recreation organizations as of January 1, 2012 in each of the three counties were reviewed, and then administrators of the organizations located in Laurel, Maryland areas were contacted for participation.

The Maryland concussion law was signed into law on May 19, 2011 and became effective July 1, 2011. All school athletic programs, recreation sport leagues, and any youth sport leagues that play on public school or parks and planning land are required to comply with this law (Crutchfield, 2011). Therefore by selecting administrators of youth sport and recreation organizations as of June 1, 2012 allowed for 1 full year after the effect of the law and the organizations to be informed of the law and its' implementation. For instance, in Montgomery County all instructional or competitive youth athletic groups scheduled through the Community Use of Public Facilities (CUPF) as of January 1, 2012 by accepting a permit to use such facilities agree to comply with all applicable provisions of Maryland concussion law. However, Anne Arundel, Howard, and Prince George's (P.G.) counties do not have a CUPF organization that manages the use of public facilities by youth sport recreation organizations/leagues. Permits for use of public fields in Prince George's County are granted by the P.G. County Department of Parks and Recreation. Similarly in Howard County permits are granted through Howard County Recreation and Parks and in Anne Arundel County through the Anne Arundel Department of Recreation and Parks. Therefore P.G. county Department of Parks and Recreation was contacted for a list of youth organizations that received permits as of January 1, 2012 and then organizations on the list located in laurel, Maryland or within a

10 mile radius were contacted. The same procedure was followed for Anne Arundel participant selection in Anne Arundel County. In Howard County the list of organizations is posted on the Howard County Recreation and Parks website. The organizations in the Howard county area of Laurel, Maryland or within a 10 mile radius were contacted. As such participants for this study were identified via, the internet, P.G. Department of Parks and Recreation, Anne Arundel Department of Recreation and Parks, and Howard County Recreation and Parks and selected for contact based on their location in Laurel, Maryland or within a 10 mile radius.

After identifying the organizations that met the sampling criteria, I sent an introductory letter to the Administrators of such organizations including information about purpose of the study, their role in the study, and contact information if interested in participating in the study. The letter was followed with a phone call to confirm interest in study participation. Contacts were made until at least 20 administrators agreed to participate in this study. However, only 15 participants were used in this qualitative study in which a phenomenology method of inquiry was used. According to Patton (2002) there are no clear rules for an appropriate sample size in qualitative research rather sample size should be determined by “what you want to know, the purpose of the inquiry, what’s at stake, what will be useful, what will have credibility, and what can be done with available time and resources” (p. 244). As such, the sample sizes in qualitative research are selected purposefully and tend to be small (Miles, Huberman, & Saldana, 2014). Creswell (2007) also confirms that there are no clear rules for sample size in qualitative research, particularly in phenomenology studies in which sample sizes range from 1 to 325.

Additionally, Patton (2002) purports that in depth information from a small number of cases rich with information can be more valuable than information from a large number of cases with less depth. Therefore, it is acceptable to select a small number of cases as long as the sampling strategy supports the purpose of the study (Patton, 2002). The sample size of 15 was sufficient in generating meaningful qualitative data in relation to the purpose of this study and allowed for saturation because this sample size allowed me to gather in-depth information from each information rich case resulting in a deep understanding of the implementation of Maryland concussion law in youth sport recreation organizations/leagues as experienced by administrators of such organizations (Patton, 2002).

Instrumentation

In qualitative studies data collection is more hands on and include interviewing participants because it is often involves exploring a phenomenon from the perspective of those that experienced it (Creswell, 2007). Thus, an interview compared to a survey allows for participants to describe their experience with a phenomenon in their own words. This means that the information collected in qualitative studies may be subjective because it describes the phenomenon from the point of view of those who are experiencing it (Patton, 2002). However, Klenke (2008) suggests that conducting interviews adds value to the study because it allows for an ample and in-depth description of the phenomenon being explored. In qualitative studies there are four (4) variations of interview instrumentation that are often used: informal conversation interview, interview guide approach, standardized open-ended interview, and the closed, fixed-response

interview. The informal conversation interview is an open-ended approach to interviewing. It allows for a tremendous amount of information to be collected because questions are not pre-determined and can be generated based on participants responses to questions. However, because of the variation in questions there may be a variation in the information collected from the participants (Patton, 2002). On the other hand in the closed, fixed-response interview, the questions and response categories are determined in advance, which allows the data to be easily analyzed and themes developed. However if the participants' experiences were not similar, their responses will not fit into the pre-determined categories (Creswell, 2007). The interview guide approach lists the questions to be asked during the interview process and an interview guide is prepared to ensure all participants are asked the same questions but does not allow for flexibility which may result in important issues being lost. The standardized open-ended interview is semi-structured in that the exact wording and sequence of questions are determined in advance and asked to all participants in the same order. This approach is useful because the open ended format of the questions allows participants to elaborate and provide detailed descriptions of their experiences. In this approach, themes are developed easily and interviewer bias is eliminated. This approach was most applicable to the purpose of this study.

Researcher –Developed Instrument

In exploring the experiences of administrators of youth sport recreation organizations with the implementation of the Maryland concussion law the standardized open-ended interview method was used to conduct the interviews. Participants responded

to standardized open ended questions about their experiences with the implementation of this law in their organizations. The semi-structured interview format included the set of open-ended questions that anticipated possible responses yet allowing for unanticipated responses (Burnard, 2005). I also asked follow up questions dependent on participants' responses to allow for richer data collection.

I developed the interview questions to be used in the study because as mentioned in the significance section of the study there is limited to no data in the literature on evaluating the implementation of state concussion laws comprehensively. Thus, an instrument has not been previously developed (IOM, 2014). The interview questions were developed based on the purpose of the study and the research questions to be answered by the study. Additionally, the instrument created by Evenson et al. (2013) served as a guide in developing the interview questions to be used in the interviews. The following questions were asked during the one on one interviews conducted face to face at the administrators' organizations.

1. Please state your job title and describe your role in your youth sport organization.
2. How long have you been in this role?
3. Have you heard of the Maryland Concussion law "Education-----Public Schools and Youth Sports Programs-----Concussions"?
4. Describe in what context you heard about the law.
5. Describe the known requirements of the law.

6. Since learning of the new law have you implemented it in your organization and work?
7. How have you implemented the requirements of the law in your organization?
8. What requirements of the law have you implemented?
9. Describe the response of the parents, coaches, and athletes' to the implementation of the requirements.
10. How do you ensure the organization is in compliance with the law requirements at all times?
11. Who monitors/ensures your organization is in compliance with the law?
12. Are there any difficulties you have encountered implementing the requirements of the law?
13. Describe in detail the challenges/barriers you have had in implementing the requirements of the law.
14. Describe in detail what has been helpful/effective in you successfully implementing the requirements of the law?
15. Do you have any recommendations/ideas for how the requirements could be better implemented to be effective in meeting its purpose?

These questions were appropriate in allowing for the collection of data that answered the research questions of the study. In their responses to these questions, participants described their experiences with the implementation of the Maryland concussion law in youth recreation sport organizations by identifying the barriers to and facilitators of successful implementation of the law. For instance, specific interview

questions and responses were used to answer the research question and two subquestions.

Table 1 identifies the interview questions and the research question it helped to answer.

Table 1

Interview Questions and Research Questions Correlation

Interview Question	Research Question
Questions 1-11	Central research question: How is the Maryland concussion law being implemented in recreation sport leagues for youth age 5–14 years old?
Questions 12 and 13	Subquestion 1: What are the identified barriers to implementing the requirements of the Maryland concussion law in recreation sport leagues for youth age 5–14 years old?
Questions 14 and 15	Subquestion 2: What are the elements that support the implementation of the Maryland concussion law in recreation sport leagues for youth age 5–14 years old?

The intent of the study is to explore barriers to implementation and identify factors that facilitate successful implementation of the Maryland concussion and this research method provided the information in the words of the participants who experienced it, therefore producing the most accurate data possible. However because in qualitative studies the researcher is the instrument, the biggest threat to validity is researcher bias (Creswell, 2007). Therefore to establish content validity, I employed member checking and peer debriefing techniques. In addition to conducting interviews, I also reviewed the components of the Maryland concussion legislation; House bill 858 and Senate bill 771 along with all available written policies and procedures from the youth

sports and recreation organizations of the study participants. These documents were reviewed to identify how the law's requirements are to be implemented and to compare to how it is being implemented as experienced by the administrators. Thus answering the research question, how is the Maryland concussion law being implemented in youth sport recreation organizations for youth age 5–14 years old?

Procedures for Data Collection

In qualitative studies there are four primary approaches to data collection: observation, interviews, and review of documents and audio-visual materials (Creswell, 2007). In this study, the primary method of data collection was recorded interviews of the youth sport and recreation organizations' administrators. Data was also collected from publicly available legislative documents on the Maryland concussion law and the policies and procedures for implementation of the law from youth sport recreation organizations. Prior to beginning the interviews, the informed consent was reviewed with the participants allowing participants to ask questions for clarity and become comfortable with the process. Once all questions were answered and informed consent signed by participants, I tested the audio recorder to ensure it was working and able to record the interview responses. In fact, Janesick (2011) recommends that researchers conduct a voice test on recording devices prior to use in the interview sessions. With audio recorder ready and working, face to face interviews were conducted in a private room at the participants' organization or in the meeting room of the Laurel Public Library. These interviews occurred over a 6 week time period from January 2015 to March 2015. I conducted all the interviews as well the review of the organizations' materials pertaining

to implementation of the Maryland concussion law and its' requirements. I concluded interview sessions by asking the participants if there was any other information they wanted to add and informed them of the next steps in process. This included reconfirming that data will be kept confidential and reminding them that they will receive a copy of the interview transcript for review. I avoided conducting back to back interviews in order to allow for transcription of interviews immediately following each interview as recommended by Rubin and Rubin (2005). After I transcribed the interviews and saved them electronically, I sent a copy of the transcription to participants for feedback to ensure all responses were accurately captured. Upon confirming the accuracy of the data collected, I analyzed the data.

Data Analysis

I used the phenomenological approach described by Creswell (2007) to analyze the data. Creswell recommended analyzing the data for significant phrases, develop meaning and cluster them into themes, and then present an exhaustive description of the phenomenon. Creswell warns that using a machine to analyze data may put an uncomfortable distance between the researcher and their data. In this study, I was very familiar with the data and knew what specific themes to look for and thus preferred to hand code the data. However recognizing that Computer Software can be beneficial in organizing, managing, storing, and analyzing data including retrieving data and displaying results, a combination of hand coding and computer software was used in the data analysis. The transcribed data was saved and organized using Microsoft word. By having the documents available in Microsoft I was able to review the data to identify

significant phrases as recommended by Creswell. I was also able to write those phrases in the margin as recommended by Miles, Huberman, and Saldana (2014). According to Creswell (2007) in qualitative analysis of data, the data should be organized for analysis, then reduced into themes through the coding process, and finally presented through figures, tables, or discussion. In following Creswell's suggestions I reduced the data into sections according to the research questions, then used the notes in the margins to form initial codes, and then combined the codes into broader themes (Miles, Huberman, and Saldana, 2014). According to Creswell, the identified themes could then be displayed or compared using charts or tables. However in phenomenology studies in which the focus is on the lived experiences of those experiencing the phenomenon, the identified themes are grouped into meaningful statements to describe the essence of the phenomenon which can be presented in tables, figures of discussion. As such, I identified several common themes in relation to the research questions from the codes used and finally drafted a summary that described the essence of the participants' experience with the implementation of the Maryland concussion law in youth sport recreation organizations (Creswell, 2007).

Issues of Trustworthiness

The trustworthiness of the data is reliant on the responses provided by the participants. According to Creswell (2007) participants are more likely to be honest and forthcoming with their responses to interview questions if they have built a relationship with the interviewer. This in turn may improve the trustworthiness of the data collected. As such, I spent time with the participants building a relationship prior to conducting the

interviews (Creswell, 2007). I used triangulation to verify the quality of the study. Triangulation provides an opportunity to use multiple and varying data sources, methods, and investigators to provide supporting evidence that validates the research findings (Creswell, 2007). Member checking was the strategy I used to confirm the accuracy of the data collected. This involved receiving feedback on the interpretation of the data from the participants of the study. Allowing the participants to provide their perspective on the accuracy of the findings strengthened the trustworthiness of this study (Creswell, 2007). Creswell referred to Lincoln and Guba (1985) definition of trustworthiness of a study to include the credibility, authenticity, transferability, dependability, and confirmability. According to Creswell, Lincoln and Guba definition is the same as the internal and external validity, reliability and objectivity of a study. Creswell suggests the triangulation of the data sources that informed the study, the methodology of the study, and the study's investigator to establish the credibility of the study. According to Creswell thick description is needed to establish transferability and for dependability and confirmability, an audit of the research process is needed. As such, in addition to triangulation, I provided a very rich description of the study to ensure its' transferability and had the research process audited by the dissertation committee for dependability and confirmability; Thus, strengthening validity and reliability of the study.

Summary

This chapter introduced, explained, and justified the research design and rationale for the design of the study. It also provided a detail explanation of the role of the researcher, the methodology of the study including participant selection, instrumentation,

and procedures for the pilot study, data collection and data analysis. This chapter provided evidence that justified a qualitative phenomenological approach to conducting this study, specifically conducting interviews as the source of data collection, including validating the quality of the instrument, data sources, and the research process. Ethical concerns and issues of trustworthiness were also addressed in this chapter.

Chapter 4 will provide additional details on data collection and analysis along with a thorough description of the study's results including the themes that were identified. The participants' demographics, the setting of the study, evidence of trustworthiness, and the research questions will also be described in Chapter 4.

Chapter 4: Results

Introduction

The purpose of this research is to explore how the Maryland Concussion Law is being implemented in youth sports and recreation organizations that serve youth age 5–14 years old. The data collected in this study answered the central research question and two subquestions.

1. Central research question: How is the Maryland concussion law being implemented in recreation sport leagues for youth age 5–14 years old?
2. Subquestion 1: What are the identified barriers to implementing the requirements of the Maryland concussion law in recreation sport leagues for youth age 5–14 years old?
3. Subquestion 2: What are the elements that support the implementation of the Maryland concussion law in recreation sport leagues for youth age 5–14 years old?

In order to address these research questions a qualitative approach was utilized to collect and analyze the data. This chapter describes the data collection, data analysis, and the results of the study. The setting in which the study took place will be described followed by the demographics of the participants. The steps in the data collection process along with the data analysis process will also be described in this chapter. This will be followed by a description of the evidence that supports the trustworthiness of this study. Each research question and data to support each finding will be addressed in this chapter and a summary of the answers to the research questions will conclude the chapter.

Setting

Often times during a study there are circumstances beyond the researcher's control that may impact the participants and thus impacting the study. There may be personal or organizational conditions such as trauma, budget cuts, or staff changes that influence the participants of a study. However, during this study there were no personal or organizational conditions revealed that may have influenced participants or their experience at the time of this study that may influence the interpretation of the study results.

Participant Demographics

This study took place in Laurel, Maryland. Participants were selected from youth sports and recreation organizations in the Prince George's, Howard, and Anne Arundel counties area of Laurel that serve youth age 5–14years old. Fifteen Administrators from organizations in the three counties were purposefully selected for this study. I also used snowballing strategy to select participants. There were five Administrators from each one of the counties interviewed. Of the 15 Administrators 13 identified themselves as also serving in the role of coach. 11 of the 15 participants were male and four were female. All participants have been in their position for a minimum of one year and a maximum of eight years. The participants were selected from youth sport and recreation leagues/organizations that served youth age 5–14years old with a variety of sports including softball, soccer, football, basketball, cheerleading, and baseball. These demographic data were easily sorted and obtained via the use of hand coding using

Microsoft Word; excel spreadsheet, and Nvivo software. Further detail on this process will be provided later in this chapter.

Data Collection

As explained in chapter 3, an interview guide was followed during each of the 15 individual interviews. All interviews took place in Laurel, Maryland. Ten of the 15 interviews took place at the various participants' recreation organization. The remaining five interviews took place in the meeting room of the Laurel public library. The interviews took place over a six week time frame with an average of three interviews each week. The interviews took approximately 30 minutes each. There were no back to back interviews to allow time for transcription immediately following an interview as recommended by Rubin and Rubin (2005). Each interview was recorded using a digital voice recorder. I also took hand written notes during the interview.

During transcription the interviews were played back on the voice recorder and compared to the handwritten notes to ensure I captured the participants' responses accurately. Once the interviews were transcribed, I emailed a copy of the transcription to the corresponding participant to confirm their responses were accurately captured. When I received confirmation from the participants that the transcription was accurate, hand coding was conducted on each interview immediately. I followed Miles, Huberman, & Saldana (2014) recommendation of hand coding the data using the margin of the word document. In addition, I utilized the comment tool in Microsoft word to identify significant phrases in the responses to each question as recommended by Creswell (2007). The significant phrases were placed in the margin of the word document and

were used to develop codes. This was done for all 15 questions in all 15 interviews immediately following the interview.

To organize the data captured in the identified phrases I also utilized an Excel spreadsheet. I used the spreadsheet to actively manage and analyze the data during the collection process. The significant phrases identified in Microsoft word was used to create categories in Excel. This allowed for identification and development of codes and themes as the data was collected. Based on the common themes and codes identified during this process, I in collaboration with the dissertation committee determined that the 15 interviews completed yielded sufficient reliable data. Therefore completion of the 20 planned interviews would not provide any additional valuable data and thus made the decision to stop the data collection at the 15 completed interviews. From the data I collected I was able to confidently identify themes that aided in describing the participants' experiences implementing the Maryland concussion law in their youth sport recreation organization.

Data Analysis

The interview questions were grouped in a manner that correlated with the three research questions as recommended by Creswell (2007). For instance, questions 1-11 of the interview answered the central research question, interview questions 12 and 13 answered the first research subquestion and interview questions 14 and 15 answered the second research subquestion. Organization of the data in this manner allowed for an organized data analysis. In addition to using Microsoft word and excel to organize the data, I used Nvivo qualitative software for data analysis. For instance, I created parent

nodes according to the three research questions. Then child nodes were created based on the codes identified in the Excel document. Those codes were developed from the significant phrases identified in the answers to the interview questions. I then placed the child nodes under the parent nodes in Nvivo and the answers to the interview questions were then placed in the child nodes and analyzed.

I analyzed the data by using the query function in Nvivo. For instance, I ran the query under each of the parent nodes. There were three parent nodes correlating to the three research questions. I ran a word frequency query for each of the parent nodes and requested the results to be shown in a word cloud and a cluster analysis. I set specific parameters for the query, for the words to be included in the query it had to have appeared a minimum of three times in the data. I requested that the results reveal the 25 words most frequently used in the answers to the research questions and for them to be displayed in a word cloud figure. As recommended by Miles, Huberman, and Saldana (2014) I used the results from the word frequency query to identify the broader themes.

I used the following three parent nodes to guide the data analysis in Nvivo: Implementation Process, Barriers to Implementation, and Facilitators of Implementation. The child nodes included under the Implementation Process parent node were the codes identified from the answers to interview questions 1-11. The specific codes used were role, years, notification, organization implementation, requirements implemented, response, organization compliance, and monitoring. Nodes were not used for answers to questions 3, 5, and 6 because the answers to questions 3 and 6 were either yes or no and the questions following were follow up questions which yielded detailed answers that

were coded and used as nodes. Question number 5 was not coded because I determined that the answer to question 5 mirrored the participants' responses to question number 8.

The codes I identified under the parent node of implementation process led to development of a broader theme to answer the research question of how the Maryland concussion law is being implemented in sport and recreation leagues for youth age 5–14years old in Laurel, Maryland. The words that emerged frequently in the answers to this question were athletes, coaches, parents, concussion, education, organization, information, law requirements, monitoring, county, awareness, and training. This suggests that these words are a part of answers that are important to how youth sport and recreation organizations are implementing the requirements of the Maryland concussion law. Thus yielding the broader theme that concussion education, information, and training to athletes, coaches, and parents are a part of the implementation process. Along with the implementation of the law's requirements including concussion awareness and monitoring by the organization and county.

Similarly in the identification of codes under the Barriers to Implementation parent node aided in answering the research subquestion of what are the identified barriers to implementing the requirements of the Maryland concussion law in recreation sport leagues for youth age 5–14years old? The nodes that were used were based on the codes identified in the answers to interview questions 12 and 13. However, question number 12 was not coded because the answer was either yes or no and the answer to question 13 is a follow up to question 12 and provided the detailed information on the barriers the participants experienced in implementing the requirements of the Maryland

concussion law. While the only child node used was barriers, the words that emerged frequently in the answers to this question were proper, coaches, parents, training, trainers, guidelines, monitoring, organization, and resources. This suggests that these participants experienced these as barriers to implementing the requirements of the Maryland concussion law.

I then ran a text query using the text “lack of” to determine the specific items the participants described as there being a lack of that served as barriers to implementing the requirements of the Maryland concussion law. This query showed that the participants reported experiencing a lack of guidelines, resources, policing/monitoring, and appropriate training to volunteer coaches as contributing to the barriers to implementation of the law’s requirements. By analyzing the data using a word frequency and text query function, I was able to match the identified codes with the identified texts to develop the larger theme around the barriers to implementing the Maryland concussion law in youth sport and recreation leagues.

The codes developed under the parent node of Facilitators of Implementation were identified under the child nodes of facilitators and recommendations. These child nodes were developed from the answers to the interview questions relating to the research subquestion what are the elements that support the implementation of the Maryland concussion law in recreation sport leagues for youth age 5–14years old. Coaches, training, concussion information, parents, athletes, education, monitoring, trainers, awareness, organization, and county were the words most frequently used in the participants’ responses. This suggests that in the participants’ experiences these were the

elements that facilitated successful implementation of the Maryland concussion law in youth sport and recreation sport leagues in Laurel, Maryland.

Additionally I also conducted a text query using the text “help” to determine the specific items the participants described as helping to facilitate implementation of the requirements of the Maryland concussion law. This query revealed that the participants reported that monitoring and policing of implementation as helping to successfully implement the requirements. Training both parents and coaches along with resources were also identified as facilitators of implementation of the law’s requirements. By analyzing the data using a word frequency and text query function, I was able to match the identified codes with the identified texts to develop the larger theme around the facilitators to implementing the Maryland concussion law in youth sport and recreation leagues.

The research utilized the data from all 15 interviews to conduct the data analysis. The analysis confirmed that there were no discrepant cases. Therefore I was able to comfortably using the codes identified in data analysis develop larger themes on how the Maryland concussion law is being implemented in youth sport and recreation organizations. From the data analysis the themes identified suggested that training, coaches, parents, guidelines, resources, and monitoring/policing are important factors in implementation of the Maryland concussion law in youth sport and recreation leagues that serve youth age 5–14years old in the Laurel, Maryland area.

Themes

The four themes I identified from the findings were: a) concussion Training, b) guidelines, c) resources, and d) policing. These themes are described in Table 2.

Table 2

Summary of Themes

Theme	Description
Concussion Training	Providing concussion education and information
Guidelines	Instructions for how to implement the requirements of the concussion law
Resources	Items needed by youth sport and recreation organizations
Policing	Monitoring to ensure compliance with the concussion law

Theme 1: Concussion training. Concussion training was identified as a theme through the findings in the central research question and the two subquestions. In Subquestion 1 the data analysis of the responses to the interview questions pertaining to how youth sport and recreation organizations are implementing the Maryland concussion law, results show that all 15 of the participants described concussion training being provided to coaches in their organization; ten of the 15 organization also provided concussion training to parents and athletes. Concussion training was also identified by two participants as a barrier to implementation. One participant stated a lack of continuous training as a barrier and the other stated the organization's lack of concussion training to parents as a barrier to implementation. Concussion training was also identified as a facilitator to implementation, specifically online concussion training, training to parents, coaches, and athletes, and access to the CDC concussion awareness information products. Continuous concussion training throughout the season and to all parents,

coaches, and athletes was identified in the findings as a recommendation for successful law implementation by participants.

Theme 2: Guidelines. Guidelines were identified in the findings as a barrier to implementation and as a recommendation for successful implementation of the Maryland concussion law. Ten of the 15 participants, more than 60% listed the lack of guidelines as a barrier to implementation. Participants reported that with limited or no guidelines each were responsible for using their own process to implement the requirements of the law. In analyzing and reviewing the data I identified that there was no uniformity in how the law was being implemented and attributed it to the lack of guidelines. In fact, participants recommended uniformed guidelines as needed for successful implementation of the Maryland concussion law in youth sport and recreation organizations.

Theme 3: Resources. Resources were identified in the findings as a barrier to implementation as well in the recommendations as needed for successful implementation. Participants described the lack of resources as a barrier to implementing the concussion. These participants identified a lack of equipment, certified athletic trainers, proper training to volunteer coaches, and access to on the spot concussion information as the missing resources that prevented successful implementation. The participants described more resources being needed for successful implementation, specifically follow-up/continuous training throughout the season, certified athletic trainers at practices and games to assist in identifying concussions and monitoring, and better/safer equipment.

Theme 4: Policing. Policing is described as monitoring the implementation of Maryland concussion law. The participants described self-monitoring as the manner in which youth sport and recreation organizations ensured compliance with the requirements of the law. There was minimal or no monitoring by regulatory entities according to participants. In fact, 75% of participants listed monitoring as a barrier to implementation and 86% of participants identified monitoring as needed for successful implementation of the Maryland concussion law. Currently the only monitoring of compliance outside of the organizations; self-monitoring is by the county organizations that issue permits to the youth sport and recreation organizations. Therefore I identified policing as a theme in the implementation of the Maryland concussion law in youth sport and recreation organizations for youth age 5–14.

Evidence of Trustworthiness

In qualitative research trustworthiness of the data relies heavily on the responses provided by participants. Creswell (2007) suggests that if participants are comfortable with the researcher they are more likely to provide honest responses to the interview questions. Therefore I intended to spend time with each participant in order to build a relationship with them prior to conducting the interviews. However, due to schedules of the participants this was not possible. Therefore I utilized triangulation to confirm the quality of the study. Specifically, I used the member checking strategy to confirm accuracy of the data collected. After I transcribed the data, the transcription was provided to the participants for feedback on the accuracy of the responses captured. According to

Creswell (2007) allowing participants to provide their perspective on the accuracy of data strengthens the trustworthiness of the data.

Creswell further suggests in his reference to Lincoln and Guba (1985) definition of trustworthiness of a study that credibility, authenticity, transferability, dependability, and confirmability are the hallmark of a study's trustworthiness. I used triangulation to confirm credibility of the study. For instance I followed Creswell's suggestion to use triangulation in order to establish the credibility of the data sources used to inform the study and the methodology of the study. Therefore in addition to conducting interviews I also reviewed the printed information from each of the participant's organization on their policies and procedures on implementing the requirements of the Maryland concussion law. The printed information was located on the websites of the various youth sport and recreation organizations from which the participants were selected. The information I reviewed on the website confirmed the responses provided by the participants during the interviews and thus confirming the credibility of the study.

By providing a very dense and detailed description of the study I provided for transferability of the study according to Creswell (2007). Creswell also purports that an audit of the research process is needed for dependability and confirmability of a study. The research process of this study was reviewed and approved by the dissertation committee, University Research Reviewer, and in part by the Institutional Review Board of the University. Triangulation, member checking, a dense study description, and an audit of the research process were to confirm the trustworthiness of this study.

Results

Each of the study's research questions were addressed through analysis of codes developed from the participants' responses to the interview questions. I used the identified codes to develop overall themes for each research question. This section discusses the findings in relation to each research question.

Primary Research Question

The primary research question driving this study was: How is the Maryland concussion law being implemented in youth sport and recreation leagues for youth age 5–14? I used interview questions 1-11 to induce the theme that relates to the implementation process used by the youth sport and recreation leagues/organizations in Laurel, Maryland to implement the requirements of the Maryland concussion law. The codes developed from the participants' responses to these interview questions were based on : Role of the implementer; the length of time in the role; how the league/organization was notified of the law and it's requirements; how the league implemented the law's requirements into their organization; what requirements were implemented by the league; response of the community (coaches, athletes, and parents) to the implementation of the requirements; how the league ensured that they were complying with the law, and what outside entity was monitoring the league's compliance.

I utilized hand coding which provided for first-hand knowledge of the findings which was helpful in interpreting the data that resulted from the Nvivo analysis. For instance, I ran a word frequency query to determine what words were used most in the

Recreation that issued permits and notified the leagues of the requirements. For the Howard County leagues it was the Howard County Department of Recreation.

In addition to how the leagues were notified. I also determined that all the leagues implemented the training to coaches' requirement and adhered to the return to play guidelines. However, only ten of the leagues provide concussion education to parents despite it being a requirement of the law. I also found there was a variation on the training and education were provided to coaches and parents. Some provided online training and others provided class room style training and hand-outs. The response of the youth sport and recreation community to the leagues' implementation of the concussion law requirements was overall supportive. The leagues monitored themselves for compliance and described that there was minimal monitoring from an outside entity. The data revealed that the county organizations used the proof of coaches' training on concussions as proof of the leagues' compliance with requirements of the law. Therefore, revealing that once the leagues' submitted this proof at the beginning of the season there was no follow-up through monitoring for compliance.

I was able to determine from the data that the leagues have implemented the requirements of the Maryland concussion law through: providing concussion training to coaches and concussion education to parents; through adhering to return to play guidelines if an athlete sustains or suspected of sustaining a concussion; self-monitoring and initial compliance monitoring from permitting entities. However there is no uniformed implementation process experienced by the participants. The answer to the primary research question as experienced by the Administrators of youth sport and

recreation leagues in Laurel, Maryland is that the concussion policy is disseminated to the youth leagues through county permitting departments. Each youth leagues are responsible for implementing the requirements throughout their organization including self-monitoring for compliance.

Subquestion 1. The first subquestion stemming from the primary research question was: What are the identified barriers to implementing the requirements of the Maryland concussion law in recreation sport leagues for youth age 5–14 years old? I identified that there were a variation of responses to interview questions 12 and 13 by the participants. The barriers experienced by the participants that were shared are identified in *figure 3* the barriers to implementation word cloud. This figure reveals what words were most frequently used in the participants' responses pertaining to what barriers they experienced when implementing the requirements of the Maryland concussion law.

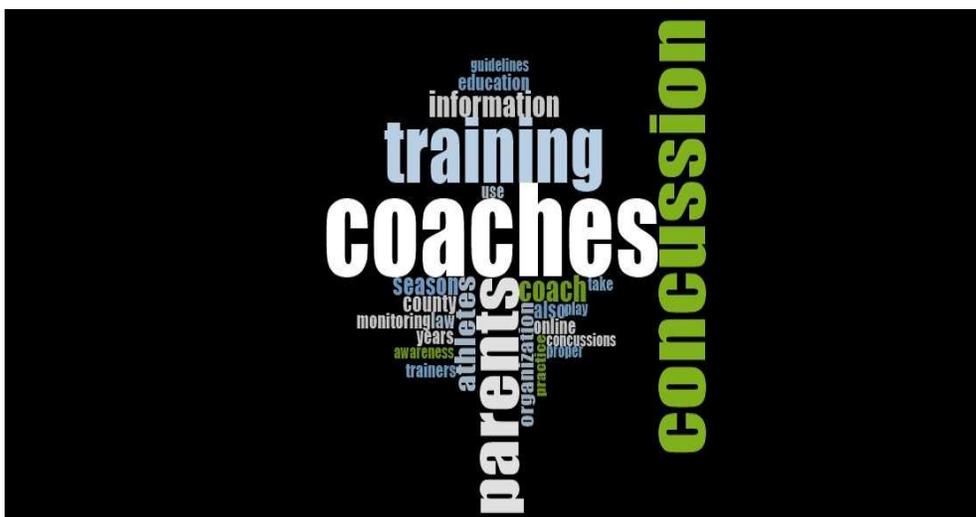


Figure 3. Word cloud of the barriers to implementation.

While the cloud identified that concussion training to coaches, education to parents, concussion awareness, proper guidelines, and monitoring as barriers they experienced I also conducted a text query to gather additional and more specific details on the barrier experienced. Figure 4 further revealed the participants reported that volunteer coaches' lack of appropriate training was a barrier, along with lack of guidelines, policing at practice and resources as barriers.

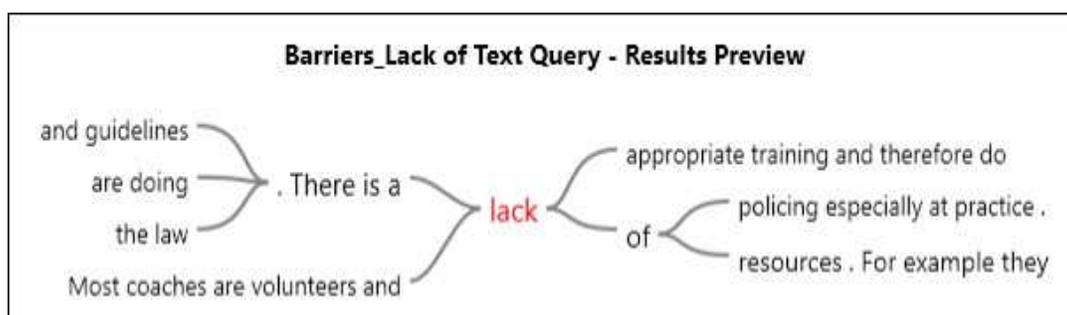


Figure 4. Text query of the barriers to implementation.

I utilized Figure 3 and Figure 4 to visually demonstrate the answer to subquestion 1. A lack of resources including appropriate training to volunteer coaches and proper guidelines to those responsible for implementation were barriers to implementing the Maryland concussion law in youth sport and recreation leagues as experienced by those implementing the requirements. The participants also identified the lack of policing especially at practices was a barrier to effectively implementing the requirements of the law.

Subquestion 2. The second subquestion stemming from the primary research question was: What are the elements that support the implementation of the Maryland concussion law in recreation sport leagues for youth, age 5–14 years old? Identifying the factors that facilitated implementation of the Maryland concussion is important to understanding the law is being implemented. The answers to interview Questions 14 and 15 identified what the participants experienced as helping to facilitate implementation as well as what they believe is needed for successful implementation. As shown in Figure 5, concussion information and training to coaches, parents, and athletes facilitated implementation of the concussion law’s requirements. Monitoring, equipment, and trainers were also identified by the participants as factors that would help in facilitating implementation.

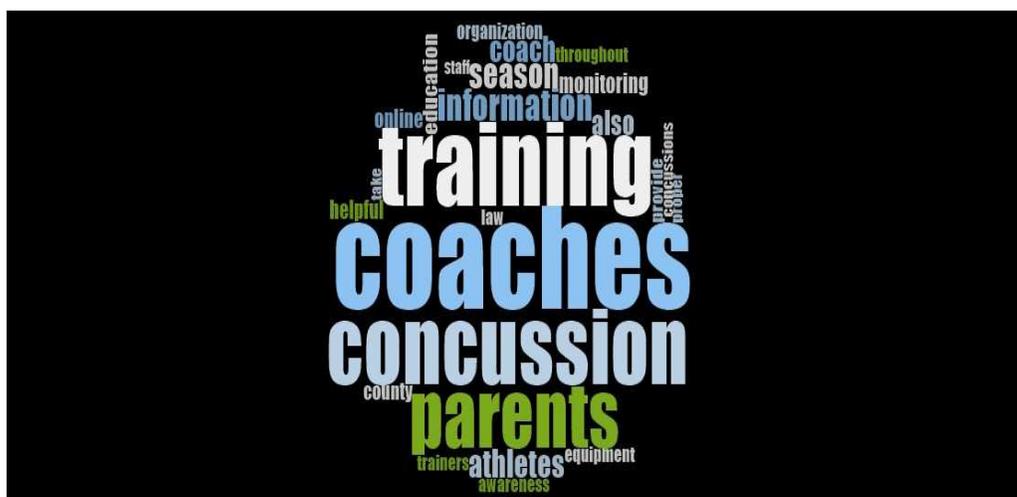


Figure 5. Word cloud of the facilitators to implementation.

I reviewed the hand coded data for more detailed description of what the Administrators experienced as facilitators to implementation of the law. This data revealed that participants described that concussion education to coaches as well as parents and athletes were helpful in implementing the requirements. The participants also reported having online training made the information more accessible and recommended having training throughout the season. More resources including proper equipment, certified trainers at practices and games to aid in monitoring, as well as monitoring would be helpful in facilitating the implementation of the Maryland concussion law in youth sport and recreation leagues that serve youth age 5–14years old.

Summary

The data from the interviews provided a detailed description of how the Maryland concussion law is being implemented in youth sport and recreation leagues including the experienced barriers to implementation and facilitators to implementation. The youth sport and recreation leagues in Anne Arundel, Howard, and Prince George’s counties in Laurel, Maryland are providing concussion training to coaches in a variety of formats, concussion education to parents, and are adhering to return to play guidelines when an athlete sustains or is suspected of sustaining a concussion. However, a lack of resources including appropriate training to volunteer coaches, proper guidelines to implementers, and policing/monitoring at practices and games are barriers to implementing the requirements of the law. Yet concussion training to coaches, parents, and athletes has been helpful in successfully facilitating implementation. According to one participant “having parents, coaches, and athletes aware of what to look for will help to better police

compliance and keep the kids safe”. Resources including better equipment, uniformed guidelines, consistent monitoring, and certified trainers present at practices and games were recommended by participants to better facilitate implementation.

The next chapter will discuss recommendations for future research and provide a detail discussion on the interpretation of findings. The chapter will include the introduction to the discussion of the study. This includes interpretation of the findings, limitations of the study, implications, potential for social change, and recommendations for practice.

Chapter 5: Discussion

Introduction

Sport-related concussions are common injuries among the millions of youth, age 5–18 years that participate in organized or recreational sport activities (Purcell, 2012). In fact youth age 5–18 years old account for 65% of all sport and recreation related brain injuries treated in ED across the United States (Bramwell et al. 2012). There have been many actions taken to address sports-related concussion in youth athletes. This study focused on the implementation of state concussion laws and the impact on the youth athlete population. Specifically this qualitative study explored the implementation of the Maryland concussion law in youth sport and recreation organizations that serve youth age 5–14 years old. The purpose of the study was to explore how the law was being implemented, what were the barriers to implementation, and what factors facilitated successful implementation of the law. The administrators of the youth sport and recreation organizations in Anne Arundel, Howard, and Prince George’s counties of Laurel, Maryland were the participants in this study. The study explored the experiences of these administrators in implementing the requirements of the Maryland concussion law in their youth sport and recreation organization. There were 15 interview questions asked to the administrators and their responses were used to answer the central research question and the two subquestions.

The central research question of how is the Maryland concussion law being implemented in youth sport and recreation leagues for youth age 5–14 was answered by interview questions 1-11. The findings indicated that information on the requirement for

these organizations to implement the policy and its requirements was disseminated to the leagues from the county organization responsible for issuing permits to these youth sport leagues. The sport leagues are then responsible for implementing the law's requirements in their organization including self-monitoring. The sport leagues have implemented the requirements of providing concussion training to coaches and concussion education to parents' requirement, as well adhering to return to play guidelines if an athlete sustains or is suspected to sustaining a concussion.

The findings indicated several barriers to implementation. According to the participants responses a lack of resources such as appropriate training and guidelines and a lack of policing of compliance with the law were major barriers in implementing the requirements of the Maryland concussion law. The findings also indicated that participants described concussion education to coaches, parents, and athletes as factors that facilitated successful implementation of the law. The recommendations made known were the use of online concussion training for easy access and training throughout the season. Additional and improved resources such as safer equipment, certified trainers at practices and games to help monitor concussions, and compliance monitoring from outside entities would be helpful in successfully implementing the requirements of the Maryland concussion law.

Interpretation of Findings

The Maryland concussion law was enacted to protect youth athletes from concussions and their long term effects through behavior change in the community of youth sports. The policy became law in 2011 and requires coaches, parents, school

personnel, and athletes to receive concussion education, adhere to return to play guidelines, and change behavior in order to prevent, identify, and manage concussions appropriately. According to Shenouda et al., 2012 the Maryland concussion law like many of the other concussion state laws are new and have not been evaluated to determine if since their implementation there has been a decrease in the number of concussions in youth athletes or that parents, coaches, and school personnel are more aware and better equipped to manage concussions. The first concussion law was enacted in 2009 and the last in 2014 and vary by state. Therefore there have not had a comprehensive evaluation of impact of the implementation of statewide concussion policies (IOM, 2014). The information in the literature is minimal and more pertain to concussion policies and impact on high school athletic population. Thus, here was a gap in the literature on how statewide concussion policies are being implemented in youth sport organizations not at the high school level. In order to add to the body of literature this study explored how the Maryland concussion law is being implemented in youth sport and recreation organizations for youth age 5–14 years old. The purpose was to explore the implementation process and to identify the barriers and facilitators of implementation of the Maryland concussion law. The findings will be used to inform policy makers and administrators as to the effectiveness of the policy and to provide best practice guidance for implementation to future implementers of similar policies. In addition, the findings in this study extends the knowledge in the youth sports concussion discipline by adding to the current limited body of literature on youth sports-related concussions.

For instance, Shenouda et al., (2012) was the first study to address the implementation of state concussion policy and found that while general concussion knowledge of soccer parents, coaches, and referees were high a gap remains in knowledge and practice. The finding in this study adds to that of Shenouda's study by exploring how the knowledge gained from the concussion law was implemented into practice. This study found that the coaches and parents of youth sport and recreation organizations that received concussion education have put it into practice by implementing and adhering to the return to play guidelines.

Additionally, the CDC (2013) assessed the implementation efforts, challenges, and successes of the implementation of two state concussion policies and found that communication with recreation leagues was identified as an important factor in successful implementation of statewide concussion policies. The CDC therefore recommended that the implementation of statewide concussion policies in relation to recreation leagues be further investigated. Thus, the finding in this study on how the Maryland concussion law is being implemented in youth sports and recreation organizations addresses the CDC's recommendation and extends the knowledge on concussion policies and recreation leagues. The findings identified the process that the recreation leagues are using to implement the requirements of the concussion law as well as the barriers and facilitators to implementation. Thus, informing future implementers of concussion law in recreation leagues.

The IOM (2014) reported that with the variation of state concussion policies, how they are being implemented, and the lack of literature on the implementation of such

policies leaves much more to be explored. The IOM specifically identified the need to study the impact of these laws, how they are being implemented in states, and what are the factors that influence successful implementation as well as the barriers to implementation. The findings in this study addresses the IOM recommendations by describing how the Maryland concussion law is being implemented and what were barriers and facilitators to the implementation of the Maryland concussion law in youth sport and recreation leagues for youth age 5–14 years old. As such, the finding in this study adds knowledge to the youth sports-related concussion discipline specifically concussion policy implementation. These findings will extend the knowledge of the findings from Shenouda et al. (2012), CDC (2013), and IOM (2014). As a result of the findings of this study it will be known in this discipline that the Maryland state concussion law is being implemented in recreation sport leagues through concussion training and education coaches, parents, and athletes and through adherence to return to play guidelines. A lack of resources and monitoring have served as barriers in implementing the law, while concussion training to parents, coaches, and athletes have helped to facilitate implementation.

The findings in this study are in line with conceptual framework used to conduct this study. The Diffusion of Innovations Theory was used as the conceptual framework for this study as it examines the nature of social intervention with specific emphasis on the process of how the intervention is introduced and implemented (Rogers, 2003). According to Rogers, the innovation, communication channels, time, and the social system influences the spread of new ideas and play and important role in the process. In

this study the innovation is the Maryland concussion law and its requirements. The findings revealed that the communication channel used to transmit the information on the new law and its requirements were through the county organizations responsible for giving permits to the youth sport and recreation organizations. For instance the participants identified that they were informed of the new law and its requirements through Prince George's County Department of Parks and Recreation, Howard County Recreation and Parks, and through the Anne Arundel County Department of Recreation and Parks. The findings show that there is consistency across the counties in the state of how the information is disseminated. However, the youth sport and recreation organizations themselves used a variety of communication channels to inform their community of the law and its requirements. For instance some coaches received concussion education via online training and others through class room based training. Similarly some organizations provide concussion education to coaches, parents, and athletes, while others only provided concussion education to coaches. Revealing a lack of consistency on how the organizations are communicating the innovation to their social system/community.

The social system in this study is the youth sport and recreation organizations that serve youth age 5–14 years old. This includes administrators of such organizations, the athletes they serve, and the parents and coaches of these youth athletes. The findings indicate that the social system was supportive of the law and its requirements which were helpful in facilitating implementation. The final component of the diffusion of innovations theory is the time it takes for the innovation to be adopted into practice. In

this study it's the time it took for the youth sport and recreation organizations to adopt the policy and its requirements. According to the participants in order to receive a permit to use county sport facilities they had to provide proof that they have implemented the concussion policy and its requirements. Therefore the time it took for these youth sport and recreation organizations to adopt these policies were relatively short. The permits are annual and the youth and sport leagues had to have adopted the policies prior to applying for a permit. The Maryland concussion law was signed into law June 2011 and as of January 2012 all organizations requesting a permit to use school or county park and recreation facilities must adhere to the law and its requirements. Therefore by tying permits to adoption of innovation influenced the time in which the innovation was adopted by the youth sport and recreation organizations.

In the use of the diffusion of innovations theory to explore the implementation of the Maryland concussion law process is central to theory. Additionally in order to identify the barriers to implementation and the factors that contribute to implementation of the law it was important to explore the entire implementation process including the four elements identified by Rogers that influence the spread of a new innovation. The process for which the innovation of the Maryland concussion was implemented into youth sport and recreation organizations corresponded with the four elements Rogers described as being central to the spread and implementation of a new innovation. In fact, according to Harringer (2014) measuring policy implementation accurately is essential to informing the policy process. Therefore by exploring the implementation process of the Maryland concussion law and the four elements that are a part of the process produced

findings that can be used to inform policy makers, administrators, and future implementers of the policy.

Limitations of the Study

There were a few limitations to this study that should be noted. For instance, the study was conducted in Laurel, Maryland and that may limit its ability to be generalized to other states. However, other states and future implementers of similar policies can use the findings in this study to guide discussions with policy makers, key stakeholders, and others responsible for implementation or affected by the law. The states can also use the findings to develop an implementation plan personalized to that state. The study was also limited to interviews with Administrators of the youth sport and recreation organizations in Laurel, MD which limits the findings to the experiences of only the Administrators. However, parents, coaches, and athletes are all part of the youth sport and recreation community/social system and play an imperative role in the implementation of the Maryland concussion law. For the law to be effective parents, coaches, and athletes must change their behavior and comply with the law. The perspective of the parents, coaches, and athletes would provide additional information on the effectiveness of the law. However because this study is focused on the implementation process and not impact it does not provide findings, guidance, or recommendations on specific requirements of the concussion law but rather on how to effectively implement such requirements.

Recommendations

In this study identifying the barriers to implementing law as well as factors that aided in implementation revealed a need for further investigation. For instance, the

barriers and facilitators were based on the experiences described by Administrators of the youth sport and recreation organization that are responsible for implementation.

However, a study that explores implementation of the law from those most impacted by law would provide an additional perspective. Therefore, it is recommended that parents, coaches, and athletes that participate in youth sport and recreation activities at youth sport and recreation organizations for youth age 5–14 should be studied. Gathering their perspective on the implementation would add to the knowledge of this study and provide details of the entire implementation process. Additionally because this study did not focus on the impact of the law it is also recommended that the impact of the law on youth sports be evaluated. It can be evaluated from several perspectives. The field would benefit from knowing if since implementation of such statewide concussion policies what affect the law has had on concussions in youth sports particularly youth athletes age 5–14 years old. The limited literature on implementation of such policies has focused on the implementation in one or two states (Shenouda et al., 2012; CDC, 2013; & IOM, 2014). There is a need for a comprehensive evaluation of the impact and of all the varying state concussion policies (CDC, 2013 & IOM, 2014). As such it is recommended a study be conducted on the effectiveness of all 50 state concussion policies. Such a study would produce a much needed comprehensive evaluation of statewide concussion policies and the impact on youth sport. Results from the recommended studies would have tremendous social implications in the field of sport-related concussions in youth sports.

Implications

The results from this current study have the potential to impact positive social change on several levels. For instance the findings could be used to develop an implementation model that could be used by future concussion policy implementers in the state of Maryland and beyond to implement the law in their organization. This use of the findings could potentially produce positive social change on a national level. The findings will also be shared with local policy makers, the county organizations responsible for issuing permits, and the youth sport and recreation organizations in Maryland. The findings will inform them of what they can do better to improve implementation and compliance, thus allowing the goal of the law to be met. This will lead to positive social changes in these organizations that will help to protect the youth athletes that participate in youth sport and recreation activities managed by such organizations from the dangers and long term effects of concussions. By sharing the results on the local and national level policy makers, youth sport and recreation organizations, state and county entities, and other implementers of the policy will be able to effectively implement the policy in compliance with the intended purpose.

In addition to using the findings in the study to inform policy makers, key stakeholders, and future implementers, the findings will also be used in practice. For instance, the data revealed what worked well with implementing the Maryland concussion law as well as what didn't work well and what is needed for successful implementation. The study found that the process for informing youth sport and recreation organizations of the law and the requirements were consistent throughout the three counties studied. However,

there was no consistency noted in how Administrators of the youth sport and recreation organizations in those studies informed their community. As such the first recommendation would be for guidelines to be given to those responsible for implementation to help with consistency in practice. There was also a recommendation for proper equipment, training, and monitoring throughout the season. This includes recommending all youth sport and recreation organizations in Maryland to provide ongoing concussion education training to parents, coaches, and athletes throughout the season and for certified trainers to be present at practices and games to monitor compliance with the law. This would be a change in the current practice and would aid in meeting the intent of the law. If the law is implemented per recommendations there is a higher possibility that youth sport and recreation organizations will adopt the policy and its requirements thus protecting youth athletes ages 5–14 from the dangers and long term effects of concussions.

Potential Social Change

If the recommendations and findings from this study are implemented into practice in the community of youth sports it could potentially have a positive social impact on youth athletes. For instance, if all youth sport and recreation organizations provide continuous concussion training to coaches, parents, and athletes it may lead to behavior change. Their ability to recognize and manage concussions may improve as an example of potential behavior change. Providing all youth sport and recreation organizations with proper equipment and the presence of athletic trainers at games and

practices may reduce the potential for youth athletes sustaining a concussion. This may also result in safer participation of youth athletes in sports.

The Administrators of youth sport and recreation organizations can also benefit from the results of this study. Providing implementation guidelines to youth sport and recreation Administrators will allow such administrators to properly implement the requirements of the law into their organization. Additionally the findings in this study provide information to such administrators on the best practice methods for implementing concussion policies into their organizations. If Administrators were to change their behavior and follow the implementation recommendations in this study the requirements of the law would be successfully implemented into their organization. The social impact would be keeping the youth that participate in sports in their organization safer.

Translating the data from this study into practice could change the culture of youth sports. The Maryland concussion law and the 49 other similar statewide concussion policies were put in place to protect youth athletes from the impact of sports-related concussions. The findings in this study yielded data on how to successfully implement the requirements of concussion policies into youth sport and recreation organizations. The studied identified which practices worked, which practices didn't work, and identified what would aid in successful implementation. Therefore the implementation of such best practices into youth sport and recreation organizations would allow for diffusion of the requirements of the law and behavior change in the community of youth sports. This change would allow for adherence to the goal of the concussion law of keeping youth sports safe for athletes that participate in youth sports.

Conclusion

For the thousands of youth age 5–14 years old that participates in organized, competitive, and recreational sports proper implementation of the law aimed at protecting them from sports-related concussions is the goal. By exploring the implementation process within the youth sport and recreation organizations that serve youth age 5–14 years old this study identified what worked well in implementing the law and what were barriers to implementing it. This information could now be used to make improvements to how these organizations are implementing the requirements and provide for more effective implementation. A change in implementation practice based on the recommendations in this study will help to protect these youth athletes from the dangers and long-term effects of concussions, therefore allowing youth age 5–14 years old to participate in youth sports safely.

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Appendix A: Recruitment Letter/E-mail message to County Organizations

Good Morning/Afternoon/Evening,

My name is Donelle McKenna and I am a doctoral student attending Walden University, working toward a Ph.D. in Public Health Policy. I am currently developing my dissertation proposal, which will look at the implementation of the Maryland concussion law in youth sports and recreation organizations. I am writing you today to inquire about the possibility of recruiting potential study participants through your organization. Specifically, I am asking if you can provide me with a list of youth sport teams/organizations that have received permits from your organization to use parks and recreation facilities including fields and/or gyms.

If you are willing and able to provide me with such a list or are interested in learning more about my study and the specific requirements of your organizations, please send an email to donelle.mckenna@waldenu.edu. I would be happy to have an extended conversation with you about the particulars of my research.

Thank you for your consideration of this request. I know that time is a valuable commodity and I appreciate yours.

Sincerely,

Donelle McKenna, MHSA

Appendix B: Letter to Participants

Greetings,

My name is Donelle McKenna and I am a student of Walden University School of Health Sciences. I am working on my dissertation study which looks at the implementation of the Maryland concussion law in youth sports and recreation organizations with sport programs for youth age 5–14 years old. My study will be based on feedback from the Administrators of such organizations located in the Laurel, MD area.

The concussion rates in youth are continuing rise and can have long term effects on youth that participate in organized youth sports. As a result many states have implemented state level concussion policies as one of many strategies to reduce concussions and the impact of concussions in youth sports.

In order to protect Maryland student athletes from the dangers of suffering a concussion the Maryland concussion law “Education –Public Schools and Youth Sports Programs-Concussions” became effective July 1, 2011 and applies to youth sports programs organized for recreational athletic competition or instruction for participants under the age of 18.

While the law has been in effect for approximately three years it is unclear how the requirements of the law is being implemented, particularly in youth sport recreation organizations are. As such my study is exploring how such organizations are implementing the requirements of this law. The primary goal of the study is to explore how the Maryland concussion law is being implemented, including information dissemination of the requirements of the law, the barriers to implementing the requirements of this law in youth sport recreation organizations and factors that have facilitated successful implementation of the law in such organizations in the state of Maryland

The intent of this research is to gather information that might tell us something about what is needed to successfully implement the requirements of this policy and protect the student athletes in Maryland from the dangers of concussions.

You are invited to participate in a face to face interview under the direction of Dr. Kimberly Dixon-Lawson in the Public Health Program at the Walden University (WU) School of Health Sciences. Taking part in this research is entirely voluntary. In order to participate in the study, you must be an Administrator of youth sports recreation organization in the Laurel, MD area and at least 18 years old. If you choose to take part in this study, you will answer questions on your experience with the implementation of the Maryland concussion law and its requirements. It will take approximately 30 minutes to complete the interview and a transcript of the interview will be forwarded to you for review to ensure your responses were captured correctly.

If you have any questions, please contact me at donelle.mckenna@waldenu.edu.

Thank you,

Donelle McKenna, MHSA