EXPLORING THE RELATIONSHIP BETWEEN ACADEMIC, DEMOGRAPHIC, AND SPORT RELATED VARIABLES ON AGGRESSION: AN EXAMINATION OF MALE STUDENT-ATHLETES ENROLLED IN TEXAS HIGH SCHOOLS

by

Jeff M. Hutchinson

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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ABSTRACT

The purpose of this non-experimental, regression study was to examine the relationships and contributions between six demographic predictor variables (ethnicity, socio-economic status, type of sport, grade level, level of sport participation, and self-reported acts of off-the-field physical aggression/fighting) on aggression (criterion variable), among male athletes enrolled in four high schools in Southeast Texas. To assess aggression levels, respondents completed a modified version of the Sport Behavior Inventory (SBI). This study utilized a hierarchical regression analysis to examine contributions made by variables to the overall model and relationships between variables. The analysis of data illustrated a strong relationship between type of sport and self-reported acts of off-the-field physical aggression/fighting and aggression. Results indicated that demographic and sport related variables had a statistically significant relationship with aggression levels of male high school athletes.

Keywords: high school, sports, aggression, athletics

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Dedication

This dissertation is dedicated to Marisol, Diego, Abigail, and Isabella, who form the protective wall of Love that surrounds me each day. To my Mother, Rita, who taught me that education is never-ending and fruitful. To my Father, Henry Ross Hutchinson (December 22, 1933 - August 24, 2006) for his everlasting love and determination. Dad, I know you watch over me every second of the day as you sit at the right hand of Our Savior in eternal glory. Finally, to Brad, my Brother, thank you for always supporting my efforts and pursuits. Each of you are the reason why I was able to complete such a monumental task.

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Table of Contents

List of Tables

List of Figures

List of Abbreviations

AANS: - American Association of Neurological Surgeons

CDC: - Centers for Disease Control

IRB: - Institutional Review Board

NCES: - National Center for Education Statistics

NFL: - National Football League

SES: - Socio-economic Status

SBI: - Sport Behavior Inventory

SPSS: - Statistical Package for the Social Sciences

TEA: - Texas Education Agency

UIL: - University Interscholastic League

CHAPTER ONE: INTRODUCTION

Introduction

Americans take their sports very seriously. Take, for instance, the City of Seattle and their fervent enthusiasm for the "12th Man" and the Superbowl Champion Seahawks. Depending on geographical location, an entire community can become infatuated with a local sports team, and the desire to win becomes immeasurable (Cottingham, 2012). As collegiate and professional sports continue to dominate television ratings and create hysterical fandom, the fervor is equally as prevalent now at the high school level (Conn, 2012; Ripley, 2013). Ireland (2011) stated that as popularity escalates, and access to images are more accessible, adolescents may often times mimic the way college and professional athletes conduct themselves, sometimes with detrimental outcomes. The prevalence of social media allows young athletes the ability to access violent, athletic and non-athletic images. One concern currently surrounding high school athletics is the amount of aggression both on the field and off (Coulomb-Cabagno & Rascle, 2006). On the field of play, concussions and serious injury are more prevalent and documented in athletics today (Kreager, 2007). Levels of violence in educational settings have increased in recent decades with more documented episodes of deviance and physical aggression (Shields, LaVoi, Bredemeier, & Power, 2007). Coaches and parents exhibit more anger and negativity during games (Ortega, 2012). As these issues continue to be a concern, there is a need for research in the specific areas of aggression, anger, and violence, specifically within the realm of athletics (Kimble, Russo, Bergman, & Galindo, 2010).

Student-athletes at the high school level receive more attention than previous generations and their aggressive feats are celebrated and documented on social media outlets (Brewer & Howarth, 2012). While it is important to motivate young athletes to perform at peak physical

levels, there is mounting concern that athletes are being pushed too hard and their aggressive tendencies may lead to problems away from the playing field (Coulomb-Cabagno & Rascle, 2006). Brewer and Howarth (2012) stated that student-athletes, as a result of the pressure to perform, may feel levels of invincibility that could lead to detrimental behavior in the presence of others. Many local athletic programs rely on funds generated from sports like football, and the desire to win sometimes trumps the safety and well-being of the athletes (Mouratidis & Michou, 2011). Depending on geographical location, high school athletics can generate greater income than college or professional athletics. This circumstance may cause student-athletes to place themselves, and others, at a higher risk of injury due to the excess of pressure from coaches, parents, and fans (Hodge & Lonsdale, 2011).

Along with teaching the concepts of a particular sport, coaches spend countless hours ensuring that athletes possess high levels of motivation, as well as guarantee that athletes understand how to utilize aggression in a proactive manner (Steinfeldt & Steinfeldt, 2010). Many parents espouse aggressiveness in their children, and use motivation techniques to make certain they have the desire to compete and win, no matter the cost (Rutten et al., 2011). Examples of overbearing parents and coaches are prevalent in news stories today (Cary, 2004; Ortega, 2012; Werner, 2012). Depending on the choice of sport, or combination of sports, athletes may display higher levels of aggression on the field, which may cause negative outcomes or deviance within and beyond the field of play **(**Tucker & Parks, 2001). While certain levels of aggression are acceptable and appropriate in many sports, especially contact sports; there is concern among educators that these acknowledged levels of aggression might matriculate into the educational environment and create undesirable outcomes (Coulomb-Cabagno & Rascle, 2006). As research continues to evolve, there is a need to ascertain the potential injurious effects

of aggressive acts on young athletes, especially those competing in contact sports (Donahue, Rip, & Vallerand, 2009).

Background

Athletic research gained momentum in the 1960s and 1970s where findings attempted to promote health benefits, and possible character building aspects connected to active participation (Hanks & Eckland, 1976; Snyder, 1972; Snyder, 1969). Recent empirical research dedicated to sports and athletics in public schools has focused primarily on the benefits of participation, such as positive academic achievement and weight loss (Ewing, 2007; Linver, Roth, & Brooks-Gunn, 2009; Rees & Sabia, 2010), and social advantages, such as self-esteem and acceptance (Rutten et al., 2011; Shields, LaVoi, Bredemeier, & Power, 2007). A developing topic in athletic participation is a focus upon coaching efficacy and the direct role coaches play in character building (Martin, Rocca, Cayanus, & Weber, 2009; Steinfeldt, & Steinfeldt, 2010). Researchers interested in possible negative outcomes of athletic participation investigated long-term, residual effects by examining deviant behaviors during college and into early adulthood (Hartmann & Massoglia, 2007; Taliaferro, Rienzo, & Donovan, 2010). Specific variables examined under the negative outcomes premise are violent behavior, underage drinking, and multiple forms of sexual and dating aggression (Kreager, 2007; Taliaferro, Rienzo, & Donovan, 2010).

Aggressiveness, as it pertains to athletics, has been researched specifically in the context of moral functioning, and focused primarily on pre-adolescence (Bredemeier & Shields, 1986; Bredemeier, Weiss, Shields, & Cooper, 1986; Gentile, Coyne, & Walsh, 2011). Studies have concluded that aggressiveness, especially among males, begins in primary grades (K-5) during physical education classes where there is an expectation for competitiveness (Bredemeier, 1975; Shields, LaVoi, Bredemeier, & Power, 2007). Mintah, Huddleston, and Doody (1999) argued

that depending on the type of sport played by an individual athlete, levels of aggression may vary. For instance, a high-school football player may possess greater levels of aggression compared to a male athlete who competes only in golf. There exists a need for research to assess aggression levels throughout the different sport choices in public high schools (Gardner, Roth & Brooks-Gunn, 2011).

The subject of non-sport related aggression has been actively researched over the past half century (Archer, 1990; Lorenz, 1966; Scheier, Fenigstein, & Buss, 1974). Research specifically dedicated to aggression in sports is evolving and necessary (Lemieux, McKelvie, & Stout, 2002; Mintah, Huddleston, & Doody, 1999; Traclet et al., 2009). Bandura's (1977) Social Learning Theory is often utilized as a solid theoretical framework for recent research in sports aggression (Maxwell, & Visek, 2009; Oproiu, 2013). Bandura (1977) suggested that individuals learn particular behaviors while interacting and modeling behaviors of others. For adolescent members of a high school sports team, this theory might be applicable as individual athletes mimic more aggressive players, or perhaps the aggressiveness of a coach. Within the concept of team and contact sports, such as football and rugby, where aggressiveness is celebrated, individuals have opportunities to model desired behavior that is acceptable to peers, and help them gain positive social status (Bandura, 1977). Participants in individual sports such as swimming and tennis might model aggressive behavior of an older athlete, or someone who competes professionally.

The present study examined the relationships between aggression levels of male high school athletes and six predictor variables. Variables included in the study were ethnicity, socio-economic status, type of sport, grade level (9-12), level of sport (varsity or sub-varsity), and self-reported acts of off-the-field physical aggression/fighting. Type of sport encompassed either

contact or non-contact status such as football (contact) or swimming (non-contact). The site high schools in the present study offer athletics at varsity and sub-varsity levels, which will define level of participation. Members of a particular ethnic group or socio-economic class might view aggression differently depending on certain characteristics of their culture, background, or neighborhood norms. To support Social Learning Theory (Bandura, 1977), young Hispanic or African-American athletes might view aggression differently than a Caucasian athlete from a privileged background based on the social interactions in their homes and neighborhoods. Violence is more prevalent in urban, lower-economic sections, and aggression is often considered necessary for survival (Ronen & Rosenbaum, 2010).

High school sports are more popular than ever, and while football remains the main vehicle for athletic income in most school districts, peripheral sports such as baseball, soccer and swimming are gaining national status (Hartmann, Sullivan, & Nelson, 2012). Most of the recent research on sports aggression suggests that athletes participating in contact sports report higher levels of overall aggression. Depending on the type of sport played by an individual, there are opportunities to model aggressive behavior which might have acceptable outcomes. This belief would support a theoretical framework such as Social Learning Theory (Bandura, 1977). While type of sport is important in sports aggression studies, the level of sport participation and age of the competitors might contribute to the overall body of research. Younger athletes craving acceptance from their older, more skilled peers, might mimic aggressive tendencies. Bandura (1977) suggested that younger individuals learn many positive and negative behaviors within close social circles with older, more mature, individuals. Current literature on aggression in athletics has yet to address several of these key predictors as they relate to aggression and social learning, specifically at the high school athletic level.

Recent studies on aggression in sports have involved the use of both male and female participants (Baccouche, Arous, Trabelsi, Masmoudi, & Elloumi, 2013; Coulomb-Cabagno & Rascle, 2006; Dubihlela & Surujlal, 2012; Willemse, Smith, & Van Wyk, 2011), as well as studies that focus solely on one gender (Abbasi-Bakhtiari, 2012; Timmerman, 2007). In order to maintain solid reliability measures, aggression studies using male and female participants included sports that were common to both genders (basketball, handball, soccer) and gender exclusive (football, baseball). As interest in research progresses, there is a need to examine aggression in female athletes and focus on their unique social and innate characteristics (Davis-Delano, 2009). The present study utilized only male student-athletes enrolled in four high schools in southeast Texas. There is no known research study on sports aggression within this particular region where sports like football are an integral part of the cultural fabric. Since there are very few documented instances of females participating in football, it was deemed appropriate to remove them from the study.

Problem Statement

Exposure to violence/aggression has become readily available to people of all demographics. Children and adolescents possess numerous methods of accessing violent images from a variety of mediums including the internet, video games, movies, and even cartoons (Conroy, Silva, Newcomer, Walker, & Johnson, 2001). At any given time a brutal altercation captured on a cell-phone in a school restroom can be uploaded to the internet for anyone to view. These types of images have the propensity to increase aggression levels in children and teach an undesired lesson, all without responsible adults having any knowledge of the exploits (Ybarra et al., 2008). There also exists a concern that student-athletes are pushed too hard by over-zealous coaches, parents, and fans, causing undue levels of distress that may lead to unnecessary

aggression off the field or court (Cary, 2004; Martin, Rocca, Cayanus, & Weber, 2009). According to Weaver (2011) adolescent aggression can be directly attributed to external factors that were not available to previous generations, thus creating national concern.

Unlike a generation prior, athletics has become more centrally important than academics in many high school settings; with sports like football providing schools much needed funding (Stearns & Glennie, 2010). According to Hartmann, Sullivan, and Nelson (2012) certain states, like Texas, California, Florida, and Ohio, place aggressive sports on a pedestal, many times at the expense of the athlete. Student-athletes may use any edge necessary, such as performance enhancing drugs, to gain a competitive edge on their opponent which may, or may not, lead to higher than necessary aggressive levels (Chantal, Soubranne, & Brunel, 2009). The motivation to win may be for the wrong reasons, thus creating a potential societal problem. Success is a common motivator for athletes yet there is a concern that the current generation of high school athlete has become more consumed with victory and accolades, leading to increased levels of aggression (Hartmann, Sullivan, & Nelson, 2012; Mouratidis & Michou, 2011).

While exposure to violence and aggression through media and games, and fervent aspirations to win at all costs are problematic (Hasan, Begue, & Bushman, 2013; Rutten et al., 2011; Sagar, Boardley, & Kavusannu, 2011), an overwhelming predicament is the escalation of reported injuries that occur in all levels of sports today (Clark, 2012; Prasad, Fields, Collins, Dick, & Comstock, 2007; Pivateau, 2007). Many gruesome injuries may be directly attributed to acts of overt aggression on the playing field (Calloway, 2013; Yerr, Collins, Fields, & Comstock, 2011). Even with scientific advancement, concussions and spinal injuries among high school athletes continue to rise each year (Castile, Collins, McIlvain, & Comstock, 2012). Officials, referees, and coaches have been assaulted at alarming rates (Borden, 2013; Ortega, 2012) and

adolescent athletes are not only watching; they are contributing to the problem (Borden, 2013). This primary goal of the present study was to focus on aggressive, injurious intent on behalf of athletes during games or matches.

Purpose Statement

The purpose of the present study was to determine the relationships of aggression levels to six demographic, academic, and sport-related predictors for male student-athletes enrolled in four high schools in southeast Texas. Predictor variables for the present study were ethnicity, socio-economic status, type of sport, level of sport participation, grade level, and self-reported acts of off-the-field physical aggression/fighting. The criterion variable, aggression, is defined as the "infliction of an aversive stimulus, physical, verbal, or gestural, upon one person by another" (Tenenbaum, Stewart, & Singer, 1997, p. 147). Participants completed an abbreviated version of the Sport Behavior Inventory (Conroy, Silva, Newcomer, Walker, & Johnson, 2001). Gender was controlled by using only male respondents.

As applied to the present study, Social Learning Theory holds that individuals have the capacity to learn specific behaviors from interacting and modeling the behavior of others (Bandura, 1977). Aggression is a human characteristic that can be both instinctive and learned (Bandura, 1973). The majority of the variables within the present study have been used in previous research studies where Social Learning is one of many theoretical constructs (Lemieux, McKelvie, & Stout, 2002; Maxwell, & Visek, 2009; Oproiu, 2013). The relationships, whether positive or negative, between the predictor and criterion variable in the present study might support the reality of social interaction. The six predictor variables (ethnicity, socio-economic status, type of sport, grade level, level of participation, self-reported acts of off-the-field physical aggression/fighting) were carefully chosen to facilitate gaps in previous research.

Significance of the Study

While much of the focus in education continues to be on impending Adequate Yearly Progress (AYP) requirements and how public schools must educate an increasingly diverse population, there still is a need to place emphasis on behavioral concerns such as violence and aggression (National Center for Education Statistics [NCES], 2011). While aggression is a naturally accepted product of interscholastic sports, educators are concerned that aggression levels can remain high when not on the playing field and become issues in the classroom and community (Gardner, Roth, & Brooks-Gunn, 2011; Jiang & Peterson, 2012; Kreager, 2007). The implications of the present study intended to add increased awareness to the differences of allowable levels of aggression during a sporting event and dangerous aggression on and off the field of play.

Within the sphere of athletics, the present study may assist stakeholders to understand aggressive tendencies by high school athletes who might think hostile aggression is acceptable for prestige, or to gain an advantage psychologically. More specifically, with the rising concern of injury and egregious violence on the field of play, coaches and instructors from specific sports can use data to understand what high school athletes consider as acceptable levels of aggression. Within the educational setting, the results of the present study may assist stakeholders identify aggressive indicators, especially among male student-athletes, and what they consider as acceptably aggressive. School counselors could work with coaches to help assist student-athletes manage aggressive tendencies, and teach them appropriate coping methods. This information may also assist administrators as they search for ways to reduce fighting and physical aggression within their schools. Student-athletes are not immune to violence and aggression outside of the athletic arena, and may be more prone to incidents while in the educational setting.

Athletic coaches may benefit from this type of study because they have access to the expectations of the athletic community, to the trust of student-athletes, and usually are able to positively influence students with behavioral issues, sometimes at a better rate than teachers. Depending on the type of sport, whether it requires collision or contact, a coach may be able to influence aggression levels and teach athletes the importance of in-game only aggression. As part of the coaching pedagogy, it may be appropriate to teach student athletes how increase aggression at certain intervals of the game, and then how to decrease said levels of aggression when games are complete.

The present study concentrated on four suburban high schools in the state of Texas, which is abundant with athletic history, and is considered one of the premier states for interscholastic athletics (Steinfeldt, Rutkowski, Vaughan, & Steinfeldt, 2011). Research is limited as it pertains to high school athletics and aggression (Pivateau, 2007). To help address a gap in current literature, the present study examined aggression in male high school athletes in one state where athletics is considered an important component of adolescent development.

Research Questions

The following research questions guided the present study**:**

RQ1: Is there a statistically significant relationship between the combination of ethnicity, and socio-economic status, type of sport, grade level, level of sport participation, and self-reported acts of off-the-field physical aggression/fighting, and levels of aggression in high school male athletes as measured by the Sport Behavior Inventory (SBI)?

RQ1a: Will there be a statistically significant contribution from grade level (9-12) and the level of sport participation (varsity, junior varsity, freshman) to the hierarchical regression model predicting aggression levels in male high school athletes?

RQ1b: Will there be a statistically significant contribution from ethnicity and socio-economic status (SES) to the hierarchical regression model predicting aggression levels in male high school athletes?

RQ1c: Will there be a statistically significant contribution from type of sport (contact, non-contact) to the hierarchical regression model predicting aggression levels in male high school athletes?

RQ1d: Will there be a statistically significant contribution from self-reported acts of off-the-field physical aggression/fighting to the hierarchical regression model predicting aggression levels in male high school athletes?

Research Hypotheses

The research study hypotheses are:

H_1: The combination of ethnicity, socio-economic status, type of sport, grade level, level of sport participation, and self-reported acts of off-the-field physical aggression/fighting will have a statistically significant relationship with levels of aggression in high school male athletes.

H_{1a}: Grade level (9-12) and the level of sport participation (varsity, junior varsity, freshman) will significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

H_{1b}: Ethnicity and socio-economic status (SES) will significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

H_{1c}: Type of sport (contact, non-contact) will significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

H_{1d}: Self-reported acts of off-the-field physical aggression/fighting will significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

Alternatively, the following are the null hypotheses:

H_{o1}: The combination of ethnicity, socio-economic status, type of sport, grade level, level of sport participation, and self-reported acts of off-the-field physical aggression/fighting will not have a statistically significant relationship with levels of aggression in high school male athletes.

H_{o1a}: Grade level (9-12) and the level of sport participation (varsity, junior varsity, freshman) will not significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

H_{o1b}: Ethnicity and socio-economic status (SES) will not significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

H_{o1c}: Type of sport (contact, non-contact) will not significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

H_{o1d}: Self-reported acts of off-the-field physical aggression/fighting will not significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

Identification of Variables

According to Tenenbaum, Stewart, and Singer (1997) aggression is defined as "the infliction of an aversive stimulus, physical, verbal, or gestural, upon one person by another" (p.

147). For the present study, aggression served as the criterion variable and was measured solely within the sphere of athletics. Most coaches and experts in athletics admit that certain acceptable levels of aggression are a necessary tool for success, no matter the sport of choice (Kimble, Russo, Bergman, & Galindo, 2010). Participants in contact sports such as football and hockey usually report more hostile aggressive feelings during a game because of the physical nature (Lemieux, McKelvie, & Stout, 2002). The present study asked male high school athletes if excessive amounts of aggression were acceptable, even acts of aggression that are normally illegal within the rules of the particular sport.

The present study utilized six predictor variables to test for relationships with aggression. The first predictor variable was ethnicity. Ethnicity is defined as an individual's nationality or ancestry, along with cultural traits and beliefs (Johnston, Delva, & O'Malley, 2007). A person's ethnicity might have a direct impact on how they view aggressive acts within the context of an athletic event. The demographic portion of the instrument required respondents to select African American, Hispanic, Caucasian, Asian American, or Other as choices from the ethnicity category.

The second predictor variable was socio-economic status (SES) defined as an individual or family's financial and social status combined (Johnston, Delva, & O'Malley, 2007). Respondents were asked to choose whether or not they received free and reduced lunch at school to ascertain SES. Students receiving free and reduced lunch, which is a federal program, must prove that they need assistance by providing information on their household incomes and number of other students receiving aid within the household. Respondents who answered "yes" to receiving free and reduced lunch were placed in the lower SES category for the purposes of the present study. Respondents reporting "no" were considered to be in a higher SES category.

The third predictor variable was type of sport. Type of sport was operationally defined as either contact or non-contact in nature. Contact sports require "intentional body-to-body contact," such as football and basketball (Keeler, 2007, p. 58). Non-contact sports require no "intentional body-to-body contact," such as baseball, swimming, track and field, and powerlifting (Keeler, 2007, p. 58). Participants were asked to select their main sport of interest (football, basketball, baseball, soccer, tennis, swimming, golf, track & field, cross country or powerlifting). While many high school athletes play multiple sports, the present study did not use number of sports played as a predictor variable. Contact sports for the present study were football, basketball, and soccer because any contact between participants is generally intentional. Non-contact sports included swimming, tennis, track & field, baseball, golf, and powerlifting. While there can be body-to-body contact in baseball, it is considered non-intentional or accidental by most participants.

The fourth and fifth predictor variables were self-reported, classification type variables. For this study, respondents were asked to select their current grade level (9-12) and level of sport participation in their selected main sport (varsity, junior-varsity, and freshman). Public high schools in the State of Texas must offer sub-varsity athletics for interested participants who are not yet mentally or physically prepared for varsity competition (University Interscholastic League [UIL], 2012). Students enrolled in ninth grade are the only athletes allowed to participate at the freshman level, but may also participate at the varsity level, although rare. Seniors (12^{th}) must participate at the varsity level, no matter their ability level (UIL, 2012).

The final predictor variable was self-reported acts of off-the-field physical aggression/fighting. Participants in the present study were asked if they had received discipline at school for acts of physical aggression, like fighting, within the last year. Discipline would

account for a form of punishment assessed by the home campus for acts of mutual combat between individuals or acts of physical aggression, which includes pushing, shoving, or hitting another individual who does not retaliate. Forms of punishment include suspension out-of-school, suspension within the school setting (ISS), removal from privileges, etc. Self-reported acts of off-the-field physical aggression/fighting was a variable of interest for the present study because of the possible relationships with higher levels of aggression.

Definitions

Motivation: An internal quality that "provides an individual with a reason to act in a certain manner, and concerns energy, direction, persistence and equifinality" (Deci & Ryan, p. 69). Motivation can come from internal sources (intrinsic), as well as external sources (extrinsic).

Contact sport: Sports where intentional body contact is expected and legal (Keeler, 2007).

Non-contact sport: Sports where intentional body contact is absent, not intentional and usually illegal (Keeler, 2007).

Discipline: Consequences received for inappropriate behavior in and out of the school setting (Irvin, Tobin, Sprague, Sugai, & Vincent, 2004). Examples of discipline could be detention, suspension, or arrest.

Research Summary

A non-experimental, correlational research design was chosen for the present study because of an interest in strength of relationships between the predictor variables (ethnicity, socio-economic status, type of sport, grade level, level of sport participation, and self-reported acts of off-the-field physical aggression/fighting) and the criterion variable, aggression (Gall,

Gall, & Borg, 2010). While there are limitations to each kind of quantitative research design, correlational research is unique in that it examines relationships between variables to determine whether or not they are related and, if so, to what degree (Creswell, 2009). The present study did not attempt to measure the differences between groups of individuals, nor did it attempt to provide cause-and-effect data analysis (Gall, Gall, & Borg). Variables were preexisting; therefore, no treatment, pretests or posttests were conducted. The sole focus of the present study was an analysis of the relationship of predictor variables and levels of aggression among male high school athletes.

Summary

America is consumed with sports and athletics at all levels (Rees & Sabia, 2010). To impress their coaches, families, and fans, young athletes from a variety of backgrounds compete rigorously, using aggression as a tool for success. The present research study intended to ascertain levels of aggression as they relate to ethnicity and socio-economic status as demographic variables. Other predictor variables were level of sport participation, type of sport, whether contact or non-contact, grade level, and self-reported acts of off-the-field physical aggression/fighting

Chapter 2 provides an in-depth examination of relevant literature and the supporting theoretical framework. Recent research specifically dedicated to aggression and sports, along with an examination of each predictor variable, will be outlined in detail.

CHAPTER TWO: REVIEW OF THE LITERATURE

One of the more popular forms of entertainment in society is professional and collegiate sports (Cottingham, 2012). Fans spend billions of dollars for merchandise that espouse their favorite team, and set lofty expectations for victory. Young athletes interested in playing at collegiate and professional levels place their bodies at maximum risk hoping for large payoffs in the future, thus fueling a passion for success. As the popularity of sports gain momentum, so does the tendency for high levels of aggression and even violence among competitors, trickling down into youth sports (Ireland, 2011). Recent research suggests that teams and individuals displaying higher levels of aggression during athletic events are more pleasing to fans (Donahue, Rip, & Vallerand, 2009; Silva & Conroy, 1995). At the forefront of attention are high school athletes who demand more exposure and popularity than prior generations. Steinfeldt, Vaughan, LaFollette, and Steinfeldt (2012) stated that high school athletes who appear more athletic and aggressive receive positive attention from fans as well as collegiate coaches. While elevated aggression levels are accepted in sports, students might misunderstand the negative aspects of aggressive behavior. There are many factors that attribute to levels of aggression in athletes, which will be discussed further in this chapter.

As each generation passes, aggression in competitive sport has become more commonplace and accepted in society (Sagar, Boardley, & Kavusannu, 2011). At the same time, much emphasis is placed on how to properly motivate young athletes to perform at accepted levels, while attempting to contain aggression to the field of play only (Hartmann, Sullivan, & Nelson, 2012). The differences between motivation and aggression are more diluted as young athletes receive mixed signals on when each is appropriate (Shields, LaVoi, Bredemeier, & Power, 2007). Violence and aggression are more readily accepted in American culture as well as

sports. According to Yerr, Collins, Fields, and Comstock (2011) participation in interscholastic athletics has increased on a regular basis over the past 20 years, and as participation increases, there are higher expectations from athletes, parents, and coaches to perform at peak levels. With lofty expectations comes increased motivational techniques and aggressiveness, along with the possibility of serious injury among young athletes. Overt acts of aggression are now more prevalent away from the playing field, making it difficult for young athletes to discern what is acceptable (Miller, Melnick, Barnes, Sabo, & Farrell, 2007).

Theoretical Framework

This quantitative study placed emphasis on aggression among male high school athletes and the relationships with six predictor variables (ethnicity, socio-economic status, grade level, type of sport, level of sport, and self-reported acts of off-the-field physical aggression/fighting). A thorough review of literature revealed that Social Learning Theory (Bandura, 1977) was the appropriate theoretical framework for aggression in male high school athletes.

Introduction

Several theories have supported determination, motivation, and aggression in athletes in the past half century. Bandura (1977) argued that individuals learned to compete and pursue excellence in a social setting where the presence of high levels of motivators, or lack thereof, instilled willingness in people. Snyder (1969) stated more specifically that athletes are motivated through relationships with teammates and their coaches, but not always garnering positive results. More specifically, Snyder (1972) offered theoretical advancements to coaches about the importance of relationships as motivators. While most forms of aggression are considered a negative personality trait, aggression is considered to be a necessary component to athletic success (Feldman, 2001; Keeler, 2007; Kerr & Males, 2011). Self-determination theory

espouses intrinsic, individual motivation (Deci & Ryan, 1985). Over the course of time, research has emphatically supported the notion that individuals and teams with higher levels of both motivation and aggression, coupled together, has proven to be successful (Bredemeier, 1975; Kerr & Males, 2011; Mintah, Huddleston & Doody, 1999; Oproiu, 2013). Much of the contemporary research pertaining to aggression in athletes asserted that social learning and social cognition are the appropriate frameworks to ground theory (Coulomb-Cabagno & Rascle, 2006; Lance & Ross, 2000; Visek & Watson, 2005).

Social Learning Theory

Bandura (1977) contended through his theory of social learning that individuals learn more through the observations and interactions with other individuals. Born from the early behavioral studies of Skinner and Freud, Bandura argued that learned behavior can derive simply from observation in social settings. The roots of Social Learning Theory derives from Bandura's Bobo doll experiment where young subjects witnessed aggressive acts by adult models and were found to imitate the very same aggressive acts when the opportunity was favorable (Bandura, Ross, & Ross, 1961). Children who witnessed only non-aggressive models displayed less aggressive tendencies during their play time (Bandura, Ross, & Ross, 1961). Bandura (1977) posited that there are two additional core concepts of Social Learning Theory beyond observational learning. One is the proper mental state of the individual and the presence of intrinsic reinforcement to satisfy learning. Observable learning is considered extrinsic in nature, but feelings of satisfaction and accomplishment must also accompany individuals as they learn socially (Bandura, 1977). Bandura also stated that individuals do not have to display new behaviors while learning new information. In the context of the present study, social learning theory would apply to athletes observing teammates' and coaches' aggressive behavior in practice and games and make conscious decisions to emulate the same action.

Social learning theory: Aggression. Bandura (1973) specifically addressed aggression as a construct by hypothesizing that the aggressor must possess the intent and intensity which is a "distinguishing feature of aggressive responses that otherwise differ widely in character" (p. 6). Bandura argued that aggression is a function of observed learning on behalf of the individual (1973). In the Bobo doll experiment (1961), subjects would use specific aggressive acts on the doll while young subjects watched. When the young subjects then had access to the same doll, most would emulate the aggressive acts such as hitting and pulling hair (Bandura, Ross, & Ross, 1961). Subjects who never witnessed specific aggressive acts by models would not emulate aggression towards the dolls themselves. As the aggressive act is observed and learned by an individual, Bandura stated that outcomes are more dominant when there is some type of positive reinforcement for the behavior. Aggressors may repeat adverse behaviors as "they serve as effective means of securing desired tangible rewards" (Bandura, 1973, p.184).

Within the specific context of athletic aggression, young athletes may display aggressive behaviors that they learned from teammates and coaches, which fortifies Bandura's theoretical framework of social learning. Young athletes today have full access to media outlets that vividly exhibit aggressive and violent actions by athletes in a variety of sports (Gentile, Coyne, & Walsh, 2011). Sports networks and social media outlets provide dazzling images of violent hits and collisions, hard fouls, and fights, allowing young athletes the opportunity to model the behavior in their own area of influence. For example, a varsity linebacker (football) may use a specific tacking technique that he viewed on a televised professional game because he enjoyed viewing the aggressive nature of the tackle. Current technology would also allow the same athlete to watch the same aggressive tackle repeatedly until mastered.

More specific to contact sports, aggression researchers contend that athletes who compete in sports such as football and hockey may be less aggressive off the field because of their ability to release constrained aggression during play. This phenomenon falls under the catharsis theory, which states that players have the ability to vent frustration in a violent manner within the sporting context (Bandura, 1973; Zillmann, Johnson, & Day, 1974) and contain levels of instrumental and hostile aggression (Buss, 1961). There is limited research that supports the notion that athletes participating in non-contact, non-violent sports only (golf, swimming, tennis) have the ability to "blow off steam" in the same manner as athletes in contact sports.

Where aggression is considered serious and punishable in schools and public locations; within the framework of athletics, there is a culture of reward and expectancy. This phenomenon is most prevalent in contact sports (Keeler, 2007). Bandura (1973) argued that aggression is learned through modeling and reinforcement, but there must also be repetition of behavior. In athletics, coaches routinely drive athletes to exert more effort in practice and in games, and reward those athletes with praise and external motivators. Aggression can be a learned and practiced component to any sport, but more specifically in contact sports (Tucker & Parks, 2001).

Motivational Factors that Lead to Aggression

All athletes desire to win no matter the choice of sport. Most are determined to succeed because of internal desires and the ability to regulate those desires once competition has ceased (Bartholomew, Ntoumanis, Ryan, & Thogerson-Ntoumani, 2011). Whether cognizant or not, young athletes set intrinsic goals which help them attain extrinsic tangibles such as championships and notoriety (Hanks & Eckland, 1976). Bredemeier and Shields (1986) found that young athletes in their pursuit of extrinsic material rewards may stray from their ability to

reason morally and attempt to aggress towards others. The current generation of high school athletes, born in the mid to late 90s, has enjoyed access to sports and competition that no previous generation has ever had access to, through the use of technology and media (Brewer & Howarth, 2012). Student-athletes now wish to pursue professional status and will make concessions on how they treat their bodies to obtain this goal (Gentile, Coyne, & Walsh, 2011). Such concessions include performance enhancing drugs, and ultra aggressive tactics deemed appropriate in this current generation (Rascle, Traclet, Souchon, Coulomb-Cabagno, & Petrucci, 2010). As student-athletes continue to find ways to achieve major intrinsic and extrinsic prizes, societal concerns such as violence, bodily injury, and even bullying, cover the national landscape and give athletes a sense of empowerment (Rutten et al., 2011)

Depending on the particular sport, and the region of the country, the importance of athletics is prevailing. For instance, a state basketball championship in Indiana, a football crown in Texas or Florida, or a state wrestling title in Iowa; where said sports are engrained in the cultural fabric. According to Mouratidis and Michou (2011) student-athletes are more determined now to obtain extrinsic goals such as trophies and scholarships because of the pressure from community and family to be successful. Young people witness professional athletes with lavish cars and homes, and desire those items themselves. The pursuit of external monetary factors might push an athlete to motivate themselves beyond necessary levels and to impose their will on others (Deci & Ryan, 1985). Sometimes the pursuit of these external goals, which might trump intrinsic factors, can force student-athletes to exert themselves beyond the accepted norm, and can become naturally more aggressive towards others (Tomar & Singh, 2012).

Defining Aggression

“Sports competition without aggression is a body without soul, competition and aggression are twins” (Tomar & Singh, p. 31, 2012). As student-athletes model aggressive techniques they learn through social observation, the topic of aggression in sports has become more prevalent in recent research (Baird & McGannon, 2009; Campo, Mellalieu, Ferrand, Martinent, & Rosnet, 2012; Mehıbe, Serkan, Gülsüm, & Fatma, 2009). Tenenbaum, Stewart, Singer, and Duda (1997) defined aggression within the framework of athletics as the “desire to inflict adverse stimulus to an opponent and to gain mental supremacy while competing” (p. 146). In order to win and compete at intense levels athletes must possess the ability to be aggressive (Maxwell & Moores, 2007). According to Tomar and Singh (2012) the word aggression “comes from the Latin word aggress, ‘ad’ (to or toward) and greater (walk)” (p. 31). Silva (1980) defined an aggressive act in sports as one with high levels of motivation, and one of fearlessness of bodily injury. Two types of defined aggression are generally associated with athletics; instrumental and hostile (Buss, 1961; Silva, 1980).

Instrumental Aggression

A more accepted form of aggression in athletics is instrumental aggression, defined as more controlled and systematic aggression, and a “means to a competitive end” (Rascle et al., 2010, p. 342). Stanger, Kavussanu, and Ring (2012) posited that instrumental aggression is necessary in sports, and coupled with higher levels of empathy for opponents, there is less desire to cause bodily injury. Coaches of high school athletes have the daunting task of teaching student athletes the differences of acceptable aggression, and controlling any aggression that might turn hostile during a game (Martin, Rocca, Cayanus, & Weber, 2009). Loughead and Leath (2001) argued that injury resulting from instrumental acts of aggression, in most cases, is

not the result of targeting one individual; instead the goal is to diminish effectiveness. An example of instrumental physical aggression in an American football game would be a defensive end placing his hands on the facemask of an opposing offensive tackle and pushing the mask upward. While this is move is considered to be aggressive and could cause injury, it is often not penalized. The overall intent is to limit the offensive player's ability to see and lose his effectiveness as a pass blocker, not necessarily to injure. Instrumental aggression is less controversial and generally accepted in contact sports such as football and hockey (Lemieux, McKelvie, & Stout, 2002).

Hostile Aggression

Simply stated, hostile aggression, whether in the sphere of athletics or not, is the intention to inflict bodily injury to another person or thing (Atkins & Stoff, 1993). Hostile aggression tends to be at the higher end of the spectrum and is usually only accepted in major collision and contact sports (Conroy et al., 2001). Tomar and Singh (2012) explained that hostile aggression moves beyond the feelings of frustration, which are more prevalent with instrumental aggression, and enters the realm of revenge and anger towards another person. Hostile aggression is rarely accepted in sports today, especially in a sensitive society where concern for injury is greater than ever (Rascle et al., 2010). Much of the research analyzing hostile aggression has remained within the school setting, especially with younger participants, such as males with ADHD and emotional disturbance (Atkins & Stoff, 1993; Taliaferro, Rienzo, & Donovan, 2010). In the concept of team and individual sports, hostile aggression generally leads to ejection and penalization and may carry over to actions beyond the field of play (Stanger, Kavussanu, & Ring, 2012). A baseball pitcher deliberately throwing at a batter's head out of anger or retaliation would be an example of hostile aggression. The present study attempted to determine if student-athletes condone specific levels of hostile aggression during particular sporting events.

Relational/Verbal Aggression

There is burgeoning research addressing another form of aggression which does not involve bodily contact of any kind. Relational aggression does involve the same intent to harm as instrumental and hostile aggression, but the aggressor-victim relationship is only social in nature (Merrell, Buchanan, & Tran, 2006). This type of aggression is prevalent in work place and educational settings, but very seldom is relational aggression considered an athletic strategy or part of competition (Merrell, Buchanan, & Tran, 2006). While adolescent athletes may experience levels of relational aggression with their peers, no current research addresses relational aggression specifically within the context of athletics.

Verbal aggression is another form of documented aggression but has received little attention from athletic researchers. Many sports allow athletes to communicate with each other verbally as well as with members of the opposing team, but a lack of empirical research makes it difficult to discern if verbal aggression actually affects the outcome of a play or game. According to Kerr and Grange (2009) interpersonal communication and verbal aggression are evident in athletic events where there also exists physical aggression. Verbal aggression would be beneficial to athletes attempting to alter the mental state of a player.

Factors that Cause Aggression in Athletes

Adolescent aggression develops primarily from emotions (Hamama & Ronen-Shenhav, 2013). Unlike adults, children and adolescents have difficulty controlling their emotions when provoked, and depending on each individual, might react in an aggressive manner as a result (Cashdan & Downes, 2012). There is escalating concern that the youth of today have more aggressive tendencies and research argues there are many related factors (Anderson & Carnagey, 2009; Gentile, Coyne, & Walsh, 2011; Ireland, 2011; Rutten et al., 2011). According to the

World Health Organization (2006) violent deaths and serious injury as a result of aggressive acts among adolescents has steadily increased in the last decade.

Research posits that socio-economic status and family background can play a significant role with aggressive tendencies in adolescents (Johnston, Delva, & O'Malley, 2007). Depending on the surroundings adolescents might be prone to more aggressive simply as a survival mechanism (Ronen & Rosenbaum, 2010). Many adolescents from lower economic upbringings come from single-parent households, and might find solace with peers who participate more in aggressive acts. In the context of athletics and aggression student-athletes from lower socio-economic backgrounds might find higher levels of aggression on the playing field as more rewarding and beneficial to their future (Leeds, Miller, & Stull, 2007). College coaches recruiting athletes from low socio-economic regions might look specifically for tough, aggressive young males and give them opportunities to leave their neighborhoods for better opportunities. Aggression by lower SES athletes might have powerful cultural implications as well (Baird & McGannon, 2009). An inner-city athlete known for aggressive tactics might be idolized and even feared by members of his community.

Other factors that might add to aggression in male adolescent athletes are masculinity and athletic identity. Steinfeldt, Rutkowski, Vaughan, and Steinfeldt (2011) added that perceived masculinity among male athletes affects on field performance. Masculinity can be considered a negative personality trait if it is portrayed in the wrong context. Depending on choice of sport, male athletes might be considered more masculine and display more aggressive attributes (Steinfeldt, Rutkowski, Vaughan, & Steinfeldt, 2011). A football player could be viewed as much more masculine than a male swimmer, especially if the football player is considered to be aggressive. Masculinity traits add to research that contends certain athletes develop athletic

identities that are not always positive (Steinfeldt & Steinfeldt, 2010). Young student-athletes might develop athletic-type personalities that espouse aggressive acts both on the field and off, and consider those acts permissible. Coaches and peers are deemed responsible for cultivating masculine athletic identities in student-athletes by creating a type of sub-culture (Steinfeldt, Rutkowski, Vaughan, & Steinfeldt, 2011). A high school football player may consider himself more masculine by committing aggressive acts during a game, even with injurious intent. Masculinity and athletic identity could lead athletes to use performance enhancing drugs (PED) to further advance their aggressive tendencies. The use of performance drugs will be discussed later in Chapter 2.

Sagar, Boardley, and Kavusannu (2011) acknowledged that fear of failure and perfectionism (Gucciardi, Mahoney, Jalleh, Donovan, & Parkes, 2012) among athletes might be factors that lead to aggression. Researchers stated that rage is a common result of fear of failure and might cause individuals to act irresponsibly (Sagar, Boardley, & Kavusannu, 2011). Male athletes are more inclined to act aggressively than females if the possibility of failure exists in a sporting event. Elite athletes expect perfection in pursuit of victory, and might react negatively if denied the opportunity (Gucciardi et al., 2012) Faced with the possibility of losing or failure to live up to standard a male athlete might use unsportsmanlike aggression as a form of retaliation. Although fear of failure is not used as a predictor variable in the present study, future research might benefit from specific explanation.

Related Literature

A thorough review of literature related to aggression in sport was conducted for the present study. While previous research on adolescent aggression was more general in focus, and placed emphasis on individuals in their normal home and school settings, the last decade has

seen an impetus towards aggression studies particularly in sports and athletics (Hodge & Lonsdale, 2011; Lemieux, McKelvie, & Stout, 2002; Maxwell, Visek, & Moores, 2009; Willemse, Smith, & Van Wyk, 2011). The focus in recent empirical research has been on the detrimental effects of aggression, most particularly bodily injury (Yerr, Collins, Fields, & Comstock, 2011) and deviance (Forbes, Adams-Curtis, Pakalka, & White, 2006; Gardner, Roth, & Brooks-Gunn, 2011).

The majority of current research on athletic aggression is relegated to collegiate and professional athletics, most predominantly in countries other than the United States. There is a wealth of research in sports aggression where European and Australian athletes are used as subjects (Baccouche et al., 2013; Kerr & Grange, 2009; Mehıbe, Serkan, Gülsüm, & Fatma, 2009; Reza, 2012). No recent (2009-2014) sports aggression studies have focused solely on high school student-athletes. Only three studies concentrated on aggression in contact and non-contact sports within the past decade. Several key descriptors were used during the search for relevant literature including, aggression in sports, athletic aggression, aggression in contact sports, aggression in non-contact sports, high school athletics, aggression and injury, football and injury, sports violence, and sports aggression and ethnicity. The current study seeks to address the following gaps in literature: (a) specific to high school athletes only, (b) lack of recent research on contact and non-contact sports and the correlation to aggression, and (c) the use of ethnicity, socio-economic status, and self-reported acts of off-the-field physical aggression/fighting as a predictor to aggression in sports.

Type of Sport

Common belief holds that high levels of aggressive behavior in sport are generally found in contact sports such as football, hockey, and rugby. Contact sports contain differing levels of

body to body contact such as full contact or semi-contact (Keeler, 2007; Mintah, Huddleston, and Doody, 1999). Silva (1983) added that contact in certain sports is integral and only incidental in others. For instance, contact is a necessary component of any football game. In order for a play to be complete, players must come into contact with each other (tackle, block). In basketball or soccer, players come into contact with each other, but contact does not control the course of the game.

Past studies have defined three types of sport in high school and collegiate athletics; collision, contact, and non-contact (Conroy, Silva, Newcomer, Walker, & Johnson, 2001; Keeler, 2007; Silva, 1983, Tucker & Parks, 2001). Sports in the collision category include "intense contact" generally of violent nature (Conroy et al., 2001). Generally sports such as football, ice hockey, boxing, and lacrosse fall into the collision category. Contact sports differ slightly in that contact is accepted, rarely injurious, and generally does not affect the outcome of a game (Tucker & Parks, 2001). Soccer and basketball are commonly considered contact sports in past research studies (Keeler, 2007). Any sport where body-to-body contact does not occur (golf, tennis, swimming) is considered non-contact (Silva, 1983). The present study operationally defines type of sport as contact and non-contact only. Any sport categorized as collision in previous studies was considered contact for the present study. High school student-athletes may have difficulty differentiating between collision and contact sports.

Maxwell and Visek (2009) studied hostile and instrumental aggression in athletes competing in the contact sport of rugby. Subjects were placed into differing groups based on prior self-reporting of unsanctioned aggression. According to Maxwell and Visek (2009) unsanctioned aggression "falls outside the rules of the game" (p. 237). In rugby, which is considered a high level contact, or collision sport, an unsanctioned act would be tackling above

the shoulder or illegal blows to an opponent's head. Rugby players wear little protective gear during a match. The research study utilized several predictor variables including age, position, and level of play. Results indicated through self-reporting measures that older, more experienced players reported acts of unsanctioned aggression but did not necessarily agree with intent to injure, which supports the same findings by Mintah, Huddleston, and Doody (1999). Maxwell and Visek (2009) also confirmed that players who were taught how to perform acts of unsanctioned aggression were more aggressive in matches. This finding supports the theoretical construct of social learning (Bandura, 1977). Maxwell and Visek (2009) stated that the ultimate goal among respondents was to achieve victory even if unsanctioned aggression was imminent.

Lemieux, McKelvie, and Stout (2002) addressed levels of body-to-body contact and the relationships to hostile aggression. Using Bandura's (1973) theory that aggression is a learned characteristic, researchers determined that athletes competing in full contact sports are more prone to hostile aggression compared to athletes who compete only in non-contact sports (Lemieux, McKelvie, & Stout, 2002). Off-field aggression was the focus of examination, where self-report questionnaires indicated differing responses. Examples of off-field aggression reporting would be fights and violence against romantic partners. One area of interest within the study was matching of physical size of athletes and non-athletes, which researchers felt might be related to aggressiveness. The researchers added basketball as a non-contact sport unlike other research projects that consider basketball a contact sport. The present study considered basketball as a contact sport. Results indicated that athletes competing in contact sports reported more hostile activity away from the field of play, and there was slight significance in larger individuals reporting hostile aggression compared to smaller individuals (Lemieux, McKelvie, & Stout, 2002).

To date, there is minimal empirical research examining sports aggression and adolescent athletes. Conroy et al., (2001) stated that younger athletes possess very similar perceptions of aggression. The creators of the Sport Behavior Inventory (SBI), which was used in the present study, contended that younger athletes primarily competing in contact and collision sports find aggressive acts more permissible (Conroy et al., 2001). Recent studies in aggression also contend that age is a factor where older, more experienced athletes legitimize aggressive behavior. For instance, a member of a varsity football team with multiple years of experience will generally view acts of instrumental and hostile aggression as necessary to achieve victory. The researchers also stated that being male and Hispanic has a high correlation to aggressive tendencies in sports (Conroy et al., 2001). This relationship might suggest that there exists a certain amount of bravado and reward when participating in aggressive contact sports like football. Along with type and level of sport, the present study will address age, gender, and ethnicity as predictors of aggression.

Football is considered one of the preeminent contact sports in America, and occasionally the focus of research in the area of aggression (Steinfeldt, Vaughan, LaFollette, & Steinfeldt, 2012). Researchers focused on bullying as an aggressive trait particularly amongst American high school football players. Steinfeldt, Vaughan, LaFollette, and Steinfeldt (2012) stated that football players were perceived as more hostile in their aggressive techniques, which transformed into the school setting. One prominent aggressive behavior acknowledged by respondents was higher levels of bullying amongst football players because of their aggressive prowess. Bullying and school violence are societal concerns that might have connections to aggressive behavior in athletics.

Culture and Ethnicity

Few cases of empirical research are available where an athlete's upbringing, culture and/or ethnicity are considered as predictors of aggression in sports. Visek (2007) argued that "cross-cultural comparisons of aggression in American athletes to those participating in sport in other countries may yield a more fluid comprehension of aggression" (p. 90). Demographics in the United States are rapidly changing and public schools are feeling the residual effect of diversity, and how to deal with cultural differences (National Center for Education Statistics [NCES], 2010). Student-athletes from non-white backgrounds face many disadvantages simply by proxy of their cultural background (Spencer-Rodgers, Gilbert, & Peng, 2013). African-American and Hispanic athletes may have difficulty assimilating into traditional white sports, thus the justification for higher aggression levels. Athletes from poor neighborhoods might use athletics to elevate their status as an aggressive individual.

An athlete's upbringing may have direct correlation with their beliefs on aggression in sports (Visek, Watson, Hurst, Maxwell, & Harris, 2010). Researchers posited that nationality and culture had significant implications on aggression in a study comparing athletes from the United States and China (Hong Kong). American athletes generally have more experience in their chosen sports because of active developmental leagues as compared to foreign athletes; therefore American athletes legitimize aggression more. Countries where athletes have limited access to development might view aggression differently. Culturally, athletes from different upbringings possess differing views on athlete identity. There exists a great idolatry of American athletes, which may not be the case for athletes of different nationalities and backgrounds. Researchers found similarities in aggressive tendencies among American and Chinese athletes participating in contact sports. Both reported higher levels of hostile acceptance (Visek et al., 2010).

Willemse, Smith, and Van Wyk (2011) studied high school athletes from impoverished backgrounds and their levels of reported aggression. Research focused on students from a poor region of South Africa who were considered successful in their respective sports, but faced racism and squalor. Males, more than females, responded that aggression is necessary to gain an edge over competition, and students from poorer sections reported higher levels of hostile aggressive acceptance (Willemse, Smith, & Van Wyk, 2011). Students reporting higher levels of academic success were inclined to be less aggressive during their respective matches. Conversely, students facing difficult educational transitions reported higher levels of aggression. Culturally, South Africa is vastly different than America, but this study was important because of the issues faced by student-athletes and their aggressive responses.

Age and Level of Participation

Other important factors pertaining to aggression in sports are age of participant and level of participation. Both of these predictor variables were utilized in the present study. Mintah, Huddleston, and Doody (1999) found that older athletes understand the repercussions and rules regarding hostile aggression and are less apt to use it during a game. Younger athletes might feel they have more to prove to coaches and peers and may use hostile aggression to gain status (Oproiu, 2013). In a study conducted by Chow, Murray, and Feltz (2009) participants included several levels of youth participation including age group distribution (11-19) and high school varsity and junior varsity participants. Results indicated that total numbers of year's participation had significant correlations with aggression along with coaching perceptions and team norms (Chow, Murray, & Feltz, 2009). Along with age and years of experience in a particular sport, there also exists the variable of moral development where an athlete understands the ramifications of aggressive behavior. Chow, Murray, and Feltz (2009) established that

athletes with more experience were able to self-report more accurately even if they disapproved of team norms of aggression.

Level of participation was one of several predictor variables utilized by Maxwell, Visek, and Moores (2009) in a study of Chinese collision, contact, and non-contact athletes. Results indicated that advanced level players scored lower on aggression scores compared with beginner and intermediate players, except for the sport of rugby (collision), where advanced respondents reported more anger and hostility. Researchers contended that level of participation and respondent age would be beneficial for future studies on aggression. The present study will utilize both age (grade level) and level of participation (varsity and non-varsity) as predictor variables.

Sportsmanship and Moral Reasoning

Fierce competition and the desire to win are normal components of athletic participation. Research suggests that higher levels of aggression are more accepted in youth sports today, but there is a concern that athletes are focusing more on winning and less on fair competition and the ability to accept loss (Donahue, Rip, & Vallerand, 2009; Nucci & Young-Shim, 2005). External dynamics, such as parents and fans, might compel young athletes to forget about the significance of sportsmanship and pursue victory at any cost. Bredemeier and Shields (2011) maintained that it is equally as vital to teach competition and not assume that young athletes possess the ability intrinsically. Athletes with higher levels of sportsmanship and moral reasoning might use aggression in a more instrumental fashion, and use it less to injure, intimidate, or cheat (Shields, 1999). Beginning in youth sports, it is important to "equip students and athletes with the insights and skills needed to sustain ethical integrity" (Bredemeier & Shields, 2011, p. 29).

Chantal, Robin, Vernat, and Bernache-Assollant (2005) hypothesized that sportsmanship, or sportspersonship, can impact athletic aggression in distinctive ways. Researchers found that athletes will generally choose between instrumental aggression, which often produces more positive outcomes, and reactive aggression which is derived from negative orientations. Athletes must first possess a clear understanding of rules and a mutual respect for officials and opponents (Chantal, Robin, Vernat & Bernache-Assollant, 2005). Instrumental aggression is then considered a functional component of a game or match. Athletes espousing a more negative approach to the game have less respect for the rules, possess a lack of sportsmanship, and use reactive or hostile aggression more readily (Shields, Bredemeier, Gardner, & Bostrom, 1995). Results of the study found moderate correlations between years of experience in either judo or rugby and sportsmanship among respondents (Chantal, Robin, Vernat & Bernache-Assollant, 2005). Results also indicated a substantial negative relationship between sportsmanship and reactive aggression. Athletes who showed more respect for the rules of the game and towards their opponents scored higher in sportsmanship categories and were less apt to resort to injurious actions on the field of play. Strong correlations between sportsmanship and feelings of pleasure towards sports participation suggested that athletes will utilize instrumental aggression as a tool for victory when they enjoy the competition.

In the sport of American football, high levels of contact and aggression are unequivocal. Thus, sportsmanship might be the difference between fair competition and injurious intent. Steinfeldt, Rutkowski, Vaughan, and Steinfeldt (2011) examined moral functioning and the moral atmosphere that surrounds high school football players. To assess moral functioning, high school football players were asked a set of questions that encompassed intent to injure, cheating, and intimidation of opponents. Moral atmosphere comprised of two dimensions; coaching

influence and teammate influence. Participants responded to scenarios constructed specifically for the game of football. Results indicated a strong relationship between an athlete's moral functioning and the positive or negative moral atmosphere that was created by coaches and teammates (Steinfeldt, Rutkowski, Vaughan, & Steinfeldt, 2011). Players who reported that their teammates and coaches encouraged antisocial behavior in games tended to judge the acts as appropriate themselves. Coaching influence was also considered to be a significant predictor of moral reasoning among high school football players.

Sportsmanship is an integral part of athlete development (Abrams, 2012). The findings in recent research support the notion that athletes who respect the rules of any game will be less inclined to cheat or injure an opponent. Ryska (2003) indicated that young athletes must have a perceived purpose of sport in order to possess sportsmanship. If such purpose is to improve skills and enhance self-esteem then the levels of sportsmanship are higher than those individuals wishing to achieve status or professional opportunities in sports (Ryska, 2003). This would support the notion that athletes today are more interested in elevation of status and might be willing to resort to overt aggressive tendencies to achieve their goals. Coaches and parents must continue to foster an atmosphere conducive to sportsmanship and not tolerate injurious intent among young athletes. Sportsmanship will not be utilized as a predictor variable in the present study, but was deemed an important part of aggression literature. Future studies will benefit from such inquiry.

Concerns and Issues Related to Aggression in Sports

In order to fortify Bandura's (1977) Social Learning Theory, it is important to discuss ways in which young athletes might learn and then model aggressive acts on the field of play. Research dedicated to aggression in sports has spanned the past 40 years (Bredemeier, 1975;

Bredemeier, 1985; Bredemeier & Shields, 1986; Messner, 1990; Silva, 1980). There was a growing concern after the Vietnam War that society was becoming more violent, and technological advances made violence more readily available to individuals (Bredemeier, 1975). Sporting events such as football and ice hockey were considered appropriate outlets for aggression as long as the aggression was contained to the playing field and did not matriculate into society (Silva, 1980). While studies on human aggression were plentiful in the 60s and 70s, little focus was applied to athletes as aggressors (Page & Moss, 1976).

Environmental Influences

Media and video games. By the 1980s, with sports media able to generate violent images and scenes more readily, there was a concern that young athletes would mimic these aggressive acts both on and off the field of play (Husman & Silva, 1984). Technological advances like instant replay were both helpful and hurtful, allowing adolescents to view them over and over again, causing great concern (Silva, 1980). Graphic images of violent hits were celebrated and used as motivational tools for young athletes (Bredemeier & Shields, 1986). Research also supported the notion that violent images in movies and video games spurned a desire for violence amongst the younger generations (Ybarra et al., 2008). A meta-analysis conducted by Weaver (2011) concluded that more than 60% of television shows and movies contain violence and aggressive acts. Aggressive individuals, especially males, are more prone to view aggressive content than non-aggressive individuals (Weaver, 2011). Enjoyment of viewing aggressive acts through multiple media sources by young athletes may have an effect on their particular style of play.

Video games are enjoyed by individuals of all ages, but major technical advancements in gaming have had negative effects on adolescents (Hasan, Begue, & Bushman, 2013). Sports

games exhibit graphic images of bodily injuries, bloodshed, and even death. While non-sports video games involving weaponry and death are the main focus of research pertaining to video game violence and aggression (Adachi & Willoughby, 2010; Ferguson et al., 2008; Hasan, Begue, & Bushman, 2013), sports games involving hard hits and fouls might contribute to such action by adolescent athletes when they compete (Anderson & Carnagey, 2009). Young athletes enjoy viewing aggressive, violent sports images and attempt to duplicate them on the athletic field (Raney & Kinnally, 2009). For example, a high school basketball player might use an aggressive maneuver such as an elbow to an opponent's face because it was deemed acceptable on a video game. Weaver's (2011) meta-analysis indicated that violence on television, movies, and video games is so widespread that younger generations assume that violence is popular. Within the study, it was assumed that violent content "typically increased psychological arousal" among viewers and intensified enjoyment (Weaver, 2011, p. 234). Student-athletes who enjoy viewing violent and aggressive images available through multiple media outlets might transfer the same sensations to the field of play.

Educational setting. Educators have become deeply concerned about violence in the educational setting as acts of deviance continue to escalate, and athletes continue getting into trouble off the field of play (Hartmann & Massoglia, 2007). Messner (1990) articulated that violence in sports is accepted and considered masculine and that more members of society actually champion those individuals who are more aggressive. Coaches and parents push their children to compete at extreme levels, many times at the cost of burnout and injury (Shields, LaVoi, Bredemeier, & Power, 2007). Steinfeldt and Steinfeldt (2010) stated that there are more outside influences on young athletes today as they search for their true athletic identities. Prior generations of athletes were able to balance the requirements of home, school, and athletics, with

more emphasis placed on education (Steinfeldt & Steinfeldt, 2010). Today, athletics have achieved more prestige because of the perceived rewards that await athletes as professionals, but the cost to reach that goal may be detrimental with unacceptable levels of persistence and aggression.

Bullying and harassment are a major concern in educational settings today (Hutzell & Payne, 2012). Recent suicides by bullying victims have alerted educators to the seriousness of this national crisis. Studies have shown that athletes are more typically the aggressor in the bullying relationship and may have difficulty understanding where this type of aggression is appropriate (Steinfeldt, Vaughan, LaFollette, & Steinfeldt, 2012). For instance, high school athletes who compete mostly in contact sports might use their aggressive tendencies to intimidate non-athletic peers while in the educational setting (Shields, 1999; Steinfeldt, Vaughan, LaFollette, & Steinfeldt, 2012).

Coaching influence. Common theory would place the primary onus of responsibility of teaching and influencing appropriate athletic aggression on coaches. Coaches can influence aggression either positively or negatively depending on their personality and goals (Martin, Rocca, Cayanus, & Weber, 2009). Mouratidis and Michou (2011) hypothesized that as student-athletes strive for perfectionism through their internal motivational techniques, the main job of a coach is to teach appropriate techniques that are conducive to success. This is not always the case though, especially in sports where the bottom line of winning outweighs character building. Overzealous coaches readily acknowledge illegal acts of aggression even when they are penalized. Many times athletes are rewarded for excess aggression especially in high profile games. In order to breed success in contact sports like football and basketball coaches might feel the need to model aggression themselves and be more punitive in their approach (Albrecht,

2009). Positive coaching influence can have profound effects on emotional well being and adolescent growth (Campo et al., 2012). Negative, hostile influence by coaches can have the same level of effect on athletes (Albrecht, 2009).

Steroids, strength, and speed. Athletes of all ages are bigger, stronger, and faster than their peers from prior generations. Within the cultures of each sport, there are new standards regarding strength and speed (Johnson, Burns, & Azevedo, 2012). Sports such as football and basketball are producing much stronger, faster athletes at the high school level. With a shift in common belief, even athletes competing in sports like golf and tennis are focusing on muscle development more than ever before (Torres-Ronda, Sanchez-Medina, & Gonzalez-Badillo, 2011). One major concern in the quest for strength and speed is the use of anabolic steroids and growth hormones among high school age athletes (Corbin, Feyrer-Melk, Phelps, & Lewis, 1994; Miller et al., 2005). Chantal, Soubranne, and Brunel (2009) maintained several negative effects from steroid use including "increased hostility and aggressive proclivities" (p. 228). Athletes using steroids for athletic advantage might place themselves and others at greater risk because of size advantage and hostile emotions. Even with a steady decline, adolescent drug use is a national crisis according to the National Center for Educational Statistics [NCES] (2004) and steroids are considered part of the problem. Efforts are being made nationwide to make steroid testing mandatory for all high school athletes (Sanney, Christy, & Kovar, 2011).

Home life. An athlete's home life may have significant implications on how they view aggressive acts. Many professional and collegiate athletes come from low socio-economic backgrounds where aggression and violence are commonplace. Thus, in order for athletes to survive "the streets" they must take on an aggressive persona, which could carry over to the field of play (Pinckney IV, Outley, Blake, & Kelly, 2011). Athletes from lower income

neighborhoods generally have access only to sports offered in their local public schools because parents were unable to afford little league sports, or they were unavailable to children (Saint Onge & Krueger, 2011). Football and basketball, both with differing levels of player-to-player contact, are the two most popular sports offered to students in low-income sections of the country (Goldsmith, 2003). These athletes might view aggression as a means of elevating stature, enabling them an opportunity to leave the neighborhood for better prospects. Athletes from poor backgrounds come to high profile athletic programs sometimes with unfavorable stereotypes (Woods, Kurtz-Costes, & Rowley, 2005). These types of social stigmas may play a role in the aggression levels of particular athletes.

Parents play a significant role, whether positive or negative, in the development of adolescent behavior. Supporters of Social Learning Theory (Bandura, 1977) contend that hostile attributes in children might be directly linked to parenting (Werner, 2012). Parents who are punitive and more hostile in their reactions to certain events can transfer hostility to children. Children who witness violence in the home are more prone to aggressive tendencies (Howells & Rosenbaum, 2008). Student-athletes with hostile, aggressive parents might take out their frustrations on the field of play, sometimes with injurious intent (Timmerman, 2007). Parents might espouse higher levels of aggression in their children and reward them for overt aggressive acts during games. For instance, a male soccer player known to have an undesirable home life might use hostile acts such as kicking an opposing player's leg or slide tackling more readily than an athlete with a normal home life. There is a need for research specifically dedicated to assessing home life and aggression levels in athletes from a variety of backgrounds.

Physiological characteristics. Although there is no specific research study directly linking physiological characteristics to aggressive tendencies in sports, there is a wealth of

information available from non-athletic studies. Gender plays a distinct role in aggression levels. Studies indicated that males are more aggressive than females in most contexts (McAndrew, 2009; Terburg, Morgan, & van Honk, 2009). Males are more predisposed to competition and status and will act more aggressively when challenged (McAndrew, 2009). Testosterone plays a significant role in aggression, which is why there is national concern for young athletes boosting testosterone levels through the use of PEDs (Sanney, Christy, & Kovar, 2011; Terburg, Morgan, & van Honk, 2009).

Other physiological concerns relating to aggression levels are conduct disorders such as Attention Deficit Hyperactivity Disorder (ADHD) and Oppositional Defiance Disorder (ODD). Diagnosed in childhood, these disorders are often considered physiological and not learned, and could have profound effects on aggressive tendencies (Donahue, 2004; Harty, Miller, Newcorn, & Halperin, 2009). Adolescents with behavioral disorders face social rejection and may act aggressively as a result (Hamama & Ronen-Shenhav, 2013). Athletes might possess difficulty with authority or lack of attention and will display more hostile aggression as a result of frustration (Clemans, Graber, & Bettencourt, 2012). Research contributing to physiological characteristics and sports aggression is necessary.

Injury

The current study places great emphasis on injury as a result of instrumental and hostile aggression in sports. It is considered that instrumental and hostile acts of aggression, most predominantly in contact sports, can lead to player injury (Prasad, Fields, Collins, Dick, & Comstock, 2007). In April of 2013, professional basketball player Patrick Beverley (Houston Rockets) made an aggressive move to try and steal the ball from NBA star point guard Russell Westbrook (Oklahoma City Thunder). The result of the aggressive, legal move was a collision

that injured Westbrook's knee and ended his season (Van horn, 2013). Beverley contended that the move was aggressive but not intentional and meant no physical harm to Westbrook (Wojnarowski, 2013). Opposing teammates and fans disagree with Beverley and ultimately blame him for the Thunder's early exit from the NBA playoffs.

The New Orleans Saints professional football organization is still experiencing the implications of sanctions imposed as a result of injurious intent by several defensive players and their coaches (Terrell, 2012). The NFL argues that several players were involved in "bounty" schemes where players were paid to intentionally injure opposing offensive stars (Pierce, 2012). One of the intended targets was future Hall of Fame quarterback, Brett Favre (Terrell, 2012). Stories of injurious intent to harm are plentiful across the national sports landscape and present in all levels of sports.

Concussion. The Centers for Disease Control [CDC] (2002) claimed that 1 in every 5 emergency room visit in the year 1999 was a sports-related injury. A growing concern in contact sports is the increase in reported concussions, especially at the high school level (Marar, McIlvain, Fields, & Comstock, 2012). Zuckerman et al. (2012) reported that concussion rates for athletes competing in football, ice hockey, and lacrosse are significant. Over the last decade, the rise in reported concussions has increased 60% because more athletes receiving blows to the head are reporting their injuries (Zuckerman et al., 2012). Previous generations of contact athletes failed to report head trauma for a variety of reasons, including loss of playing time, ignorance about symptoms, and perceived "toughness and ruggedness" (Cusimano et al., 2013). Contact sport participants enjoy the physical aspect of the game and may dismiss any minor blow to the head, even though the blow might cause considerable damage to the brain (U.S. News and World Report, 2012).

Research has also confirmed that head injuries are becoming more prevalent in semi-contact sports like basketball and soccer, as well as baseball and softball (American Association of Neurological Surgeons [AANS], 2011; Zuckerman et al., 2012). Of greater concern are reports that concussions are also the result of body-to-playing surface (Cusimano et al., 2013). For instance, a basketball player hitting their head on the court after a hard foul or unintentional trip would constitute a player-to-surface injury. Reports across the country also confirm that female athletes report concussion symptoms more than males in comparable sports like basketball (Marar, McIlvain, Fields, & Comstock, 2012). This might support the notion that males report less because of image and masculinity issues. Even mild, repeated blows to the head can cause long term damage in athletes (Clark, 2012). Symptoms for concussion include vomiting, loss of memory, and severe headaches (Clark, 2012). Long term effects include severe memory loss, dementia, and sensitivity to light (Marar, McIlvain, Fields, & Comstock, 2012). Although very rare, brain injury is the leading cause of death of athletes competing in their respective sport (AANS, 2011).

With a wealth of concussion research available to interested stakeholders, there exists a gap in recent studies involving concussions as a result of violent, intentionally aggressive acts. For instance, collecting data on reported concussions where the opposing player was penalized for an illegal hit. The National Football League (NFL) is now penalizing defensive players for intentional helmet-to-helmet hits that can normally be avoided (NFL, 2012). Collegiate and high school governing entities are following suit (Clark, 2012). Athletes participating in collision and high-level contact sports are often celebrated for hard hits to opposing players regardless of the outcome.

Orthopedic injury. One week into his freshman season at Arizona State University, Cory Hahn slid into second base on a routine double-play. His collision with the opposing infielder caused significant damage to his spinal cord, and Hahn is now paralyzed from the chest down (Yahoo Sports, 2013). It is unknown if Hahn was attempting to aggressively slide into second base or if the play was routine. Reports of serious spinal injury in sports are rare, but the long term effects are of major concern. According to Kerr, Collins, Fields, and Comstock (2011) younger athletes are at greater risk for spinal and orthopedic injuries because of "continued biological growth" (p. 594). Spinal injuries are almost always the result of player-to-player contact and most prevalent in football (Olson, Sikka, Hamilton, & Krohn, 2011). What is difficult to discern is whether spinal injury is the result of the victim's over aggression or the opposing player, or just pure accident. There is no known research study that addresses violent intent to harm another athlete(s) during a game.

The most common injury reported to athletic trainers is sprained ligaments and slight fractures of bones (Shankar, Fields, Collins, Dick, & Comstock, 2007). Medical research states that minor orthopedic injuries to the ankles and other bones come from actual competition, not practice (Olson, Sikka, Hamilton, & Krohn, 2011; Shankar et al., 2007). These findings might support theories on instrumental and hostile aggression in sports where players intentionally hurt opposing players instead of their teammates in practice.

Summary

Theories examining aggression in humans are plentiful and wide-ranging. While the collection of empirical research surrounding aggression and athletics is growing, there is a specific need within the construct of why athletes choose to be aggressive. Social Learning Theory contends that individuals learn specific behaviors by interaction and modeling with other

individuals in a variety of settings (Bandura, 1977). Since sports are communal by nature, and young athletes many times model the actions of others, this study supports Social Learning Theory (Bandura, 1977) as a conceptual framework. It is imperative that researchers delve into the minds of young athletes, beginning as early as little league, to discern where they learn aggressive tendencies. Predictors such as upbringing, family income, and ethnicity could have profound implications on the results. Stakeholders will attempt to recognize why an athlete would want to injure another athlete and potentially end their young career, or perhaps, attempt to remove the best player from the opposing team just to change the course of a game.

What is known now is that the popularity of sports is unprecedented, and that athletes are pushed harder by external forces (coaches, parents, fans) than prior generations. It is difficult to determine whether this level of external pressure has a direct correlation with levels of aggression. Injuries as a direct result of aggressive, injurious acts are more prevalent and may support theories that athletes today are more aggressive. Concussions and orthopedic injuries are reported and treated more by athletic trainers at all levels. There is a need for coaches and trainers to report whether such injuries are the direct result of an aggressive act, such as a deliberate blow to a players head during a football game, or just an accident or mistake on the part of the individual athlete.

The current literature on aggression in athletics (Conroy et al., 2001; Maxwell & Moores, 2007; Rascle et al., 2010) is thorough, but there is little consistency from one study to the next. A review of the current literature reveals gaps in the variables used to predict aggression as well as the general age and type of sport of the athlete. Very few studies build upon another, and while they mention previous studies in their review of literature, there is a lack of common direction. Many studies utilize participants from foreign countries where the athletic subculture

is vastly different than America (Mehıbe, Serkan, Gülsüm, & Fatma, 2009; Oproiu, 2013; Tomar & Singh, 2012; Traclet et al., 2009). Many of the participants in recent sports aggression studies compete in college and professional athletics (Abbasi-Bakhtiari, 2012; Maxwell & Visek, 2009). There is a need to examine adolescents who compete in high school athletics which are increasingly more popular and competitive than ever before. The present study attempted to address these needs and add to the current body of literature.

CHAPTER THREE: METHODOLOGY

Introduction

The present study attempted to determine if selected demographic, academic, and sport-related predictors were related to levels of aggression among male high school athletes. Chapter 3 provides an outline of the chosen research design, the research questions and hypotheses, and a detailed description of the setting and participants. Along with the aforementioned topics, the instrument used for data collection will be introduced and scrutinized, as well as identifying the process for data analysis, and a summary of the overall methodology.

Research Design

A non-experimental, correlational research design was utilized to determine if there is a relationship between ethnicity, socio-economic status (SES), grade level, type of sport, and level of sport participation and self-reported acts of off-the-field physical aggression/fighting. Ethnicity, SES, grade level, and level of participation were used as control variables within a hierarchical regression model. Correlational studies are effective when examining the degree of relationship between variables of interest (Creswell, 2009). Unlike a causal-comparative study where groups are compared, or a true experimental design where a treatment is administered to participants, a correlational design attempts to determine the strength of relationships, whether positive or negative, between variables (Gall, Gall, & Borg, 2010). No treatment was applied to groups, and variables were pre-existing. The present study employed one criterion variable (aggression) and six predictor variables that represent demographic (ethnicity, socio-economic status), academic (grade level, self-reported acts of off-the-field physical aggression/fighting), and athletic type data (type of sport, level of sport participation).

Research Questions

The following research questions guided the present study**:**

RQ1: Is there a statistically significant relationship between the combination of ethnicity, and socio-economic status, type of sport, grade level, level of sport participation, and self-reported acts of off-the-field physical aggression/fighting, and levels of aggression in high school male athletes as measured by the Sport Behavior Inventory (SBI)?

RQ1a: Will there be a statistically significant contribution from grade level (9-12) and the level of sport participation (varsity, junior varsity, freshman) to the hierarchical regression model predicting aggression levels in male high school athletes?

RQ1b: Will there be a statistically significant contribution from ethnicity and socio-economic status (SES) to the hierarchical regression model predicting aggression levels in male high school athletes?

RQ1c: Will there be a statistically significant contribution from type of sport (contact, non-contact) to the hierarchical regression model predicting aggression levels in male high school athletes?

RQ1d: Will there be a statistically significant contribution from self-reported acts of off-the-field physical aggression/fighting to the hierarchical regression model predicting aggression levels in male high school athletes?

Research Hypotheses

The research study hypotheses are:

H_1: The combination of ethnicity, socio-economic status, type of sport, grade level, level of sport participation, and self-reported acts of off-the-field physical

aggression/fighting will have a statistically significant relationship with levels of aggression in high school male athletes.

H_{1a}: Grade level (9-12) and the level of sport participation (varsity, junior varsity, freshman) will significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

H_{1b}: Ethnicity and socio-economic status (SES) will significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

H_{1c}: Type of sport (contact, non-contact) will significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

H_{1d}: Self-reported acts of off-the-field physical aggression/fighting will significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

Alternatively, the following are the null hypotheses:

H_{o1}: The combination of ethnicity, socio-economic status, type of sport, grade level, level of sport participation, and self-reported acts of off-the-field physical aggression/fighting will not have a statistically significant relationship with levels of aggression in high school male athletes.

H_{o1a}: Grade level (9-12) and the level of sport participation (varsity, junior varsity, freshman) will not significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

H_{o1b}: Ethnicity and socio-economic status (SES) will not significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

H_{o1c}: Type of sport (contact, non-contact) will not significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

H_{o1d}: Self-reported acts of off-the-field physical aggression/fighting will not significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

Participants

Participants for the present study were male student-athletes (*N*=179) enrolled in one of four high schools (9-12) and active participants in interscholastic athletics. A total of 201 student-athletes accessed the online instrument, with 22 having to be removed due incomplete data, or unfinished questionnaires. Age range for the participants was 14-19 years. Age was not a specific predictor variable because many student-athletes may be re-classification students who were held back a grade level. Each male student-athlete was an active participant in one or more interscholastic athletic events as defined by the University Interscholastic League (UIL), which is the athletic governing body of the State of Texas public schools. All participants were selected through convenience sampling procedures (Gall, Gall, & Borg, 2010). Convenience sampling was selected as a viable method because the population is located in the same geographic location as the researcher.

Setting

Four high schools located in three southeast Texas school districts served as the setting for the present study. Each school is designated as a 4A public school (Texas Education Agency [TEA], 2012). The 4A alphanumeric designation for each school is based upon the schools' current enrollment (University Interscholastic League [UIL], 2012). Schools with 4A designation contain between 1200 and 1800 students, with 5A being the largest, and 1A being

the smallest designation in the State of Texas (UIL, 2012). Each school was assigned a corresponding number and described in this section. The three school districts chosen for this study shared several demographic and geographic characteristics and are divided by a county line. All districts are suburban and located approximately 28-35 miles from a large urban center with a population of over 7 million. Table 3.1 provides a breakdown of sports provided at each site school.

High school 1 was in its fourth year of existence at the time of the study and contains approximately 1450 students. Demographics for High School 1 at the time of the study were 47% Caucasian, 48% Hispanic, 4% African-American, and 1% other. Male students participating in Interscholastic athletics chose from three contact sports (football, basketball, and soccer), and seven non-contact sports (baseball, track & field, cross-country, powerlifting, swimming, tennis, and golf).

High school 2 is located in the same district as High School 1, and shares many of the same demographic characteristics. High school 2 opened in 1927 and was the only high school in the district until 2010 when High School 1 opened. Demographics at the time of the study for High School 2 were 56% Caucasian, 40% Hispanic, 3% African-American, and 1% other. Male athletes had the same choice of contact and non-contact sports as athletes in High School 1.

High school 3 is located in a neighboring district of schools' 1, 2, and 4, and is close in proximity. High school 3 was chosen for the study not only because it shares many of the same demographic characteristics and sport choices, but because it strengthens the sample numbers. The demographic breakdown for High School 3 at the time of the study was 60% Caucasian, 31% Hispanic, 7% African-American, and 2% other. Male students participating in athletics at

High School 3 chose from four contact sports; football, basketball, wrestling, and soccer, and four non-contact sports; baseball, track & field, cross-country, and tennis.

High school 4 is in the same regional district as 1, 2, and 3, and the signature high school for its own district. This school is the original high school of the district and has been in existence since the 1920s. Over the course of the last three decades, high school 4 has experienced a cultural shift and has received the "Unacceptable" rating from the State of Texas the last two years. High school 4 demographics at the time of the study were 39% African-American, 37% Hispanic, 23% Caucasian, and 1% other. Male students choose from football, basketball, wrestling, and soccer as contact sports, and baseball, track & field, tennis, golf, and cross-country in the non-contact category.

Table 3.1

Contact and Non-contact Sports Offered at Site Schools

School	Contact Sports	Non-Contact Sports
1	Football, Basketball, Soccer	Baseball, Tennis, Swimming, Golf, Track & Field, Cross Country, Power-lifting
2	Football, Basketball, Soccer	Baseball, Tennis, Swimming, Golf, Track & Field, Cross Country, Power-lifting
3	Football, Basketball, Soccer	Baseball, Tennis, Track & Field, Cross Country
4	Football, Basketball, Soccer, Wrestling	Baseball, Tennis, Golf, Track & Field, Cross Country

Instrumentation

To assess aggression levels among male high school athletes, the present study utilized a modified version of the Sport Behavior Inventory (SBI) questionnaire (Conroy, Silva, Newcomer, Walker, & Johnson, 2001) which contains ten aggressive sport scenarios and requires respondents to answer questions based on the scenarios. Each scenario contains eight sub-questions. Student-athletes answered questions on an 8-point Likert-scale ranging from "Never OK" to "Always OK." The scenarios within the survey contain sports that are similar to the sports offered to participants of the present study. The creators of SBI contended that the scenarios are appropriate because each portrays clear, injurious intent, which causes non-normal distributions (Conroy et al., 2001). Partial scores were created for each scenario to ensure a more even distribution. Higher respondent scores on each of the 12 scenarios (85-100) represent perceptions that aggressive behavior is accepted and legitimate during a game or match.

To ensure the effectiveness of the instrument, the creators distributed the SBI to a panel of experts in the field of sports aggression for a thorough review and critique (Conroy et al., 2001). Several exploratory factor analyses were performed to determine structural validity with careful consideration to each parcel, or scenario. Cross validation was confirmed through the use of confirmatory factor analysis (Conroy et al., 2001). Cronbach's alpha was estimated at 0.97 for reliability of instrument (Conroy et al., 2001). Correlation matrices were utilized by the authors to test for relationships between SBI total scores and scores on the Buss/Perry Aggression Questionnaire [BPAQ] (1992), which was distributed to a small group of the overall sample. This process was used to ensure external validity (Conroy et al., 2001).

An example of one sport related aggressive scenario:

After the opposing football team's running back is tackled and on the ground, a defensive lineman grabs the player's foot and twists it.

After reading the scenario, each student-athlete was required to answer three different sets of sub-questions. The first question asked respondents if it is OK for them to perform such an aggressive act.

An example of a sub-question:

Is it OK for a player to do this in the following situation?

The second section addressed different levels of participants (high school, collegiate, professional) and whether it is OK for the level of participant to perform the aggressive act. The third section asked game situation questions, such as whether or not an aggressive act is OK in a championship game, in the last two minutes of a game, or if an opposing player already performed the aggressive act first.

Example:

If a player from the opposing team did it first?

Maxwell, Visek, and Moores (2009) utilized the SBI in a study to determine the aggression levels of male Chinese athletes. The SBI was added to a list of aggression instruments where results were combined prior to data analysis. To address efficiency and sport specificity, only four questions from the SBI were utilized. The sport scenarios chosen were basketball, soccer, and football which were familiar sports to Chinese athletes (Maxwell, Visek, & Moores, 2009). Four new scenarios were created by researchers to address sports that were more identifiable to Chinese athletes such as rugby and squash. Internal reliability was reported to be consistently high (.93), with provocation frequency (.78) and anger intensity (.82) by using a maximum likelihood factor analysis (Maxwell, Visek, & Moores, 2009). The modified SBI

utilized by Maxwell, Visek, and Moores (2009) scored the highest internal reliability score (.93) and displayed strong positive correlations with the other scales used in the study.

A modified version of the SBI used by Tucker and Parks (2001) found the instrument to be equally reliable through the use of a 3 x 2 analysis of variance (ANOVA). Internal reliability for the instrument was considered stable with a Cronbach's alpha of .99 (Tucker & Parks, 2001). Like the present study, the main focus of Tucker and Parks (2001) was sport type, whether contact or non-contact, but conversely, the study utilized both males and females as participants. Aggression was found to be more significant in males competing in contact sports, according to the final scores on the modified SBI (Tucker & Parks, 2001).

Visek and Watson (2005) employed a modified version of the SBI to assess the aggression levels of hockey players ranging from youth to professional status. The study only focused on one sport (hockey), and the modified version used video clips of specific aggressive hockey plays during the data collection process instead of written scenarios. Video clips were shown to each participant before answering the questions provided by the SBI. Once the clip was viewed, each participant was then asked to answer the questions which were measured on the 8-point Likert scale. According to the authors, the use of video clips added a more comprehensive view of aggressive acts to the study (Visek & Watson, 2005). Scores for instrument reliability were not reported in Visek and Watson (2005), but the authors used a panel of hockey experts to determine inter-rater reliability, which exceeded a score of 85%.

For the present study, demographic data was requested from each participant via a short questionnaire created independently by the researcher (Appendix B). Each question in the demographic section of the instrument was designed to address each of the six predictor variables. Questions included participant ethnicity, SES, grade level, level of sport participation,

type of sport, and discipline reporting for fighting and physical aggression away from the field of play. Respondents were asked to select one sport that they consider to be their main sport of interest (see Table 3.2). Many high school athletes participate in multiple sports in one school year, but were required to select only one sport before moving to the next section of the questionnaire. To address SES, participants answered one question pertaining to their school meal status (free and reduced). Students receiving free and reduced assistance were coded into a separate category indicating a lower socio-economic status than students who do not receive federal meal assistance. Table 3.3 displays the coding assignments for each answer from the demographic portion of the survey.

Table 3.2

Number of participants for each sport

Sport	Number	Percent	Type
Football	60	34%	Contact
Soccer	36	20%	Contact
Basketball	25	14%	Contact
Baseball	18	10%	Non-contact
Golf	15	8%	Non-contact
Tennis	10	5%	Non-contact
Swimming	10	5%	Non-contact
Track & Field	4	.2%	Non-contact
Cross Country	1	.1%	Non-contact
Powerlifting	0	0%	Non-contact
Wrestling	0	0%	Contact

Note: N = 179
Note: Sports were combined by type (contact, non-contact)

Table 3.3

Coding assignments for predictor variables

Variable	Assigned codes
Ethnicity	
	African-American = 1
	Hispanic = 2
	Caucasian = 3
	Asian American = 4
	Other = 5
Socio-economic Status (SES)	
	Do you receive free and reduced lunch?
	YES = 1, NO = 2
Type of Sport	
	Contact = 1, Non-contact = 2
Grade Level	
	Freshman = 1
	Sophomore = 2
	Junior = 3
	Senior = 4
Level of Participation	
	Varsity = 1
	Junior Varsity = 2
	Freshman = 3
Self-reported acts of off-the-field physical aggression/fighting	
	Have you received discipline for acts of fighting or physical aggression in school?
	YES = 1, NO = 2

Procedures

Once permission was granted by the Institutional Review Board (see Appendix C) the process of data collection began. Letters of request to conduct research to each Superintendent were followed by letters to Athletic Directors, campus Principals, and campus athletic coordinators (Appendix A). A formal meeting with head athletic personnel and administrators

allowed the researcher to present the specifics of the study along with detailed instructions on the process of data collection. Informed consent from parents was obtained prior to the beginning of data collection (see Appendix D). The consent letter stated that student-athletes may withdraw from participation at anytime without penalty or punishment.

Data collection took place at the end of the fall sports season during the months of November and December. Student-athletes were given a two-week window to answer questions and were required to complete the survey in the presence of a coach or director. Questionnaires were uploaded into Survey Monkey software to allow ease of use and consistency. Athletes assembled in a computer lab designated by the school so that they could be monitored during the survey period. Athletes and parents not interested in participating in the research study did not have access to the survey, and there were no consequences for lack of participation. Student-athletes remained anonymous throughout the entire data collection process.

Data Analysis

Data was collected and retrieved from the SBI (Conroy et al., 2001) for analysis then entered into the *Statistical Package for Social Sciences* (SPSS) Version 20.0 to begin the regression analysis. Assumptions of multiple linear regression analysis will ensure normality, linearity, homoscedasticity, collinearity, and the removal of extreme outliers (Steinberg, 2008). Tables for assumptions, correlation coefficients, and summaries of the hierarchical regression model are located in Chapter 4. Data retrieved from surveys was sorted and stored into an Excel spread sheet prior to analysis. Descriptive statistics included mean scores and standard deviations (Steinberg, 2008). Assumption testing was used to ensure that all variables followed a normal distribution (Sprinthall, 2007). To ensure normality, histograms and normal probability plots were created and accessed (Gall, Gall, & Borg, 2010). Steinberg (2008) suggested that

extreme outliers may have negative effects on results and a violation of homoscedasticity. Homoscedasticity ensures that residuals are dispersed randomly throughout the range of the estimated dependent (Berry, 1993). Assumption testing also included a probability-probability plot (p-p plot) to ensure that residuals were distributed normally. Cook's and Mahalanobis distances were utilized to address multivariate outliers within the model. Outliers with a score of greater than 1 were removed from the analysis. Variance Inflation Factors (VIF) and tolerance levels addressed the absence or presence of multicollinearity (Berry & Feldman, 1985). Pearson's product-moment correlation coefficients (*r*) were utilized to determine a numeric linear relation between variables (Sprinthall, 2007). A correlation matrix is presented in Chapter 4.

For direct analysis of the relationships and statistical significance, the present study employed a hierarchical regression analysis so that predictor variables were grouped accordingly and subsequent variables of interest were added to the model (Gall, Gall, & Borg, 2010). Variables for the present study included levels of aggression (criterion) and ethnicity, socio-economic status, type of sport (contact, non-contact), grade level, level of sport participation, and self-reported acts of fighting and physical aggression outside the field of play (predictors). Grade level and level of sport participation were placed into Block 1. It was deemed appropriate to pair these predictor variables because they classify and categorize the participants accordingly. Demographic predictor variables ethnicity and socio-economic status were placed into Block 2 of the model and added to the analysis. The block 2 predictor variables were unique because they address the possibility of cultural influences, which supports Social Learning Theory (Bandura, 1977). Block 3 added the variable of interest, type of sport, to determine whether playing in contact or non-contact sports made a significant contribution to the model. The final

block of the hierarchical regression analysis included self-reported acts of fighting or physical aggression away from the field of play, which is the sixth and final predictor variable (see Table 3.4).

Table 3.4

Block assignments for variables and methods of measurement and analysis

Variable	Source/Measurement	Unit of Analysis	Theoretical Justification
Block 1 – Academic/Classification (Predictor)			
- Grade level	Demographic survey Question #1 *What grade are you in?*	9, 10, 11, or 12	Social Learning Theory (Bandura, 1977)
- Level of Participation	Demographic survey Question #6 - *What is your level of participation in your main sport?*	Varsity, junior varsity freshman	Social Learning Theory (Bandura, 1977)
Block 2 – Demographic (Predictor)			
- Ethnicity	Demographic survey Question #2 - *What is your ethnicity?*	African-American Hispanic, Caucasian Asian American, Other	Social Leaning Theory (Bandura, 1977)
- SES	Demographic survey Question #3 - *Do you receive free and reduced lunch?*	Receives free and lunch Yes or No	Social Learning Theory (Bandura, 1977)
Block 3 – (Predictor)			
- Type of sport	Demographic survey Question #5 - *Which would you consider to be your main sport?*	Football, baseball soccer, swimming, golf, tennis, basketball, powerlifting, track & field, cross country	Social Learning Theory (Bandura, 1977)

Table 3.4 continued

Block assignments for variables and methods of measurement and analysis (continued)

Variable	Source/Measurement	Unit of Analysis	Theoretical Justification
Block 4 - (Predictor)			
- Self-report for off-field aggression	Demographic survey Question #7 - *Have you received discipline of any kind for physical aggression or fighting off the field over the last year?*	Received discipline for off-the-field acts of aggression over the last year	Social Learning Theory (Bandura, 1977)
Criterion Variable			
- Aggression	Sport Behavior Inventory Modified version Questions #8-25	Never OK – 1-2 Seldom OK – 3-4 Often OK – 5-6 Always OK – 7-8	Social Learning Theory (Bandura, 1977)

Summary

Violence and aggression among adolescents is a societal concern (Bartholomew, Ntoumanis, Ryan, & Thogerson-Ntoumani, 2011). Severe injury as a result of body-to-body contact in sports also causes alarm, with escalating reports of concussion and even death (Shankar, Fields, Collins, Dick, & Comstock, 2007). While aggression is an accepted and necessary component of athletics, there are concerns that the younger generation of student-athlete is having difficulty discerning acceptable aggression on and off the field of play. The present study attempted to determine if male high school athletes understood their own feelings of aggression and whether they consciously choose to use aggression even when not participating in athletics. While the present study only analyzed a regional sample of athletes,

the results could assist parents, coaches, and school administrators in monitoring aggression levels. Chapter 4 will discuss the findings of the regression analysis.

CHAPTER FOUR: FINDINGS

The purpose of the present study was to examine the relationships between demographic and sport-related predictors and aggression in male high school athletes. A total of 179 student-athletes participated in this study. This chapter presents the results of the data collection and will adhere to the following organization: (a) demographic statistics and overview of data analysis, (b) assumption testing and descriptive statistics, (c) findings from hierarchical regression analysis that addressed the research questions and hypotheses, and (d) a summary of results.

The predictor variables for this correlational study were ethnicity, SES, type of sport, level of sport participation, grade level, and self-reported acts of off-the-field physical aggression/fighting. The lone criterion variable was aggression. The following research questions and hypotheses were addressed:

RQ1: Is there a statistically significant relationship between the combination of ethnicity, and socio-economic status, type of sport, grade level, level of sport participation, and self-reported acts of off-the-field physical aggression/fighting, and levels of aggression in high school male athletes as measured by the Sport Behavior Inventory (SBI)?

RQ1a: Will there be a statistically significant contribution from grade level (9-12) and the level of sport participation (varsity, junior varsity, freshman) to the hierarchical regression model predicting aggression levels in male high school athletes?

RQ1b: Will there be a statistically significant contribution from ethnicity and socio-economic status (SES) to the hierarchical regression model predicting aggression levels in male high school athletes?

RQ1c: Will there be a statistically significant contribution from type of sport (contact, non-contact) to the hierarchical regression model predicting aggression levels in male high school athletes?

RQ1d: Will there be a statistically significant contribution from self-reported acts of off-the-field physical aggression/fighting to the hierarchical regression model predicting aggression levels in male high school athletes?

Research Hypotheses

The research study hypotheses are:

H_1: The combination of ethnicity, socio-economic status, type of sport, grade level, level of sport participation, and self-reported acts of off-the-field physical aggression/fighting will have a statistically significant relationship with levels of aggression in high school male athletes.

H_{1a}: Grade level (9-12) and the level of sport participation (varsity, junior varsity, freshman) will significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

H_{1b}: Ethnicity and socio-economic status (SES) will significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

H_{1c}: Type of sport (contact, non-contact) will significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

H_{1d}: Self-reported acts of off-the-field physical aggression/fighting will significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

Alternatively, the following are the null hypotheses:

H_{o1}: The combination of ethnicity, socio-economic status, type of sport, grade level, level of sport participation, and self-reported acts of off-the-field physical aggression/fighting will not have a statistically significant relationship with levels of aggression in high school male athletes.

H_{o1a}: Grade level (9-12) and the level of sport participation (varsity, junior varsity, freshman) will not significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

H_{o1b}: Ethnicity and socio-economic status (SES) will not significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

H_{o1c}: Type of sport (contact, non-contact) will not significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

H_{o1d}: Self-reported acts of off-the-field physical aggression/fighting will not significantly contribute to the hierarchical regression model predicting aggression in male high school athletes.

Descriptive Data

A total of 179 male, student athletes, representing four high schools in southeast Texas participated in the present study. Table 4.1 contains descriptive data for all variables. Mean scores from the modified version of the SBI (Conroy et al., 2001) for each predictor variable are presented in Table 4.2. Each high school is located in a diverse, suburban setting, 28-35 miles from a large urban center. Descriptive data for academic and athletic variables included grade level (9-12) and level of participation (varsity, junior varsity, freshman). Grade classification included 9^{th} grade (*n*=43, 24%), 10^{th} (*n*=37, 20.7%), 11^{th} (*n*=48, 26.8%), and 12^{th} (*n*=51, 28.5%). Age was not considered as a variable because students may have repeated a grade at some point

in their educational career. In the State of Texas, public high schools participating in UIL athletics identify three levels of competition participation for athletes (varsity, junior varsity, and freshman). Varsity athletics is the top level and competes for state titles in each participating sport. All students, grades 9-12 may participate at the varsity level. Any student enrolled in the 12th grade must play varsity for their chosen sport despite their ability level. Only students enrolled in 9th grade may compete at the freshman level of participation. For the present study, 112 athletes (62.6%) participated at the varsity level in their main sport, with junior varsity comprising of 46 individuals (25.7%), and the final 21 individuals (11.7%) competing at the freshman level. Grade level and level of participation represented Block 1 in the hierarchical regression study.

Respondents were asked to identify their ethnicity as part of the demographic questionnaire with 40.8% identifying as Hispanic (*n*=73), 38 % Caucasian (*n*=68), 18.4 % African American (*n*=33), and 2.8% identified themselves as Asian American or Other (*n*=5). To ascertain socioeconomic status (SES), which was a predictor variable, respondents were asked to select whether or not they received free and reduced lunch at school. Participants selecting "YES" comprised of 46.9% (*n*=84), and "NO" 53.1% (*n*=95). Ethnicity and SES were placed in Block 2 in the hierarchical regression analysis.

Type of sport (contact, non-contact) represented a specific predictor variable in this study. Participants were asked to select their main sport, whether or not they were multiple sport athletes. It is not uncommon for student-athletes to compete in more than one sport during the school year, but for the purposes of this study, athletes were asked to select the sport they considered their primary sport. The sample high schools offer eleven sports (football, cross country, swimming, tennis, golf, baseball, basketball, track & field, soccer, power-lifting,

wrestling) for male athletes. Sports with allowable levels of contact were football, basketball, soccer, and wrestling. The remaining sports (cross-country, swimming, tennis, golf, baseball, track & field, cross country, power-lifting) were coded as non-contact sports. A thorough breakdown of each sport offered at the participating schools was presented in Chapter 3 (see Table 3.1 and 3.2). Contact sport participants comprised of 67.6% of the study (*n*=121), while non-contact participants comprised of 32.4% (*n*=58). Type of sport (contact, non-contact) was a variable of interest in this study and represented Block 3 in the hierarchical regression analysis.

The final predictor variable for this study was self-reported acts of off-the-field physical aggression/fighting. Respondents were asked if they were involved in an act of physical aggression or fighting (mutual combat) away from the field of play within the last year. Athletes answering "YES" comprised of 18.4% (*n*=33) of the respondents, and athletes selecting "NO" comprised of 81.6% (*n*=146). Self-reported acts of off-the-field physical aggression/fighting was also a variable of interest in this study and represented Block 4 in the hierarchical regression analysis.

Participants were asked to complete a modified version of the Sport Behavior Inventory (Conroy et al., 2001) to ascertain levels of aggression, which was the lone criterion variable for this study (Appendix B). Each respondent who completed the survey received a combined score from all questions using an 8-point Likert scale. The lowest combined score for any respondent was 48 and the highest possible combined score was 384. No respondent scored at the highest possible level. The mean score for 179 participants was 81.83 (*SD* = 30.771).

Table 4.1

Descriptive Statistics

Variables	*N/n*	%	*M*	*SD*
Total Participants	179	100%		
Aggression	179	100%	81.83	30.771
Ethnicity				
African-American	33	18.4%		
Hispanic	73	40.8%		
Caucasian	68	38.0%		
Asian-American	5	2.8%		
Other	0	0%		
Socioeconomic Status				
Eligible for free/reduced lunch	84	46.9%		
Not eligible for free/reduced lunch	95	53.1%		
Type of Sport				
Contact	121	67.6%		
Non-contact	58	32.4%		
Level of Participation				
Varsity	112	62.6%		
Junior Varsity	46	25.7%		
Freshman	21	11.7%		
Grade Level				
9	43	24%		
10	37	20.7%		
11	48	26.8%		
12	51	28.5%		

Table 4.1

Descriptive Statistics (continued)

Variables	*N/n*	%	*M*	*SD*
Self-reported physical aggression				
Yes	33	18.4%		
No	146	81.6%		

Correlations Among Variables

Through the use of the Pearson's product-moment correlation procedure, both positive and negative relationships were present among variables, with some correlations indicating significance at both the 0.05 and 0.01 levels (see Table 4.2). According to Cohen (1983), correlations between .10 and .29 are considered weak, .30 to .49 have a moderate correlation, and .50 to 1.0 are considered strong correlations. Correlations among variables were either positive, negative, or had no relationship at all. A negative correlation indicates that the direction of the relationship is negative and does not signify strength (Gall, Gall, & Borg, 2010). A moderate positive correlation between type of sport and aggression was present (r = .31, p = .001). Conversely, self-reported acts of off-field fighting and physical aggression displayed a moderate negative relationship with aggression scores (r = -.45, p = .00). The remaining predictor variables, ethnicity, SES, level of sport participation, and grade level indicated no significant statistical relationship with aggression. Relationships among predictor variables were mostly weak to moderate. A strong relationship was evident between ethnicity and SES (r = .56, p = .001).

Table 4.2

Correlation analysis between criterion and predictor variables

	Aggr	1	2	3	4	5	6
Aggression (Aggr)	1						
1. Ethnicity	-.17	1					
2. SES	.03	.56**	1				
3. Type of sport	.31**	-.48**	-.32**	1			
4. Grade level	-.04	-.15	-.14	-.04	1		
5. Level of particiation	-.01	.09	.18	.03	-.68**	1	
6. Self-reported	-.45**	.23	.04	-.21	.11	-.08	1

*Note. *p<0.05, **p<0.01 – (n=179 participants)*

Assumption Testing

Prior to the hierarchical regression analysis, it was necessary to test for normality, linearity, homoscedasticity, and multicollinearity (Gall, Gall, & Borg, 2010). A histogram (Figure 1) indicated that scores on the aggression questionnaire (SBI) were evenly distributed and suggested normality. In order to ensure a normal distribution of the residuals, a probability-probability plot was created and analyzed (Figure 2). The plot indicates a normal distribution of the residuals, which typically suggests that there is no deviation and the assumption of normality is tenable. A visual inspection of scatterplots for all six variables indicated linear trend lines. To test for multivariate outliers, Cook's and Mahalanobis distances were calculated using chi-square statistics and there were no violations (Tabachnick & Fidell, 2007). Table 4.3 displays multivariate outlier tests (Cook's, Mahalanobis) as well as variance inflation factor (VIF) statistics, which tested for multicollinearity. Results from VIF tests indicated that all variables

were fewer than 2.0, which suggested that the estimated *βs* are well established in the regression model and there is a lack of multicollinearity (Tabachnick & Fidell, 2007). No extreme outliers were present in this study, therefore total number of participants (*N* = 179) remained the same. Within the correlation analysis (Table 4.2) moderate to strong correlations among predictor variables were present but none that exceeded the critical .90 level.

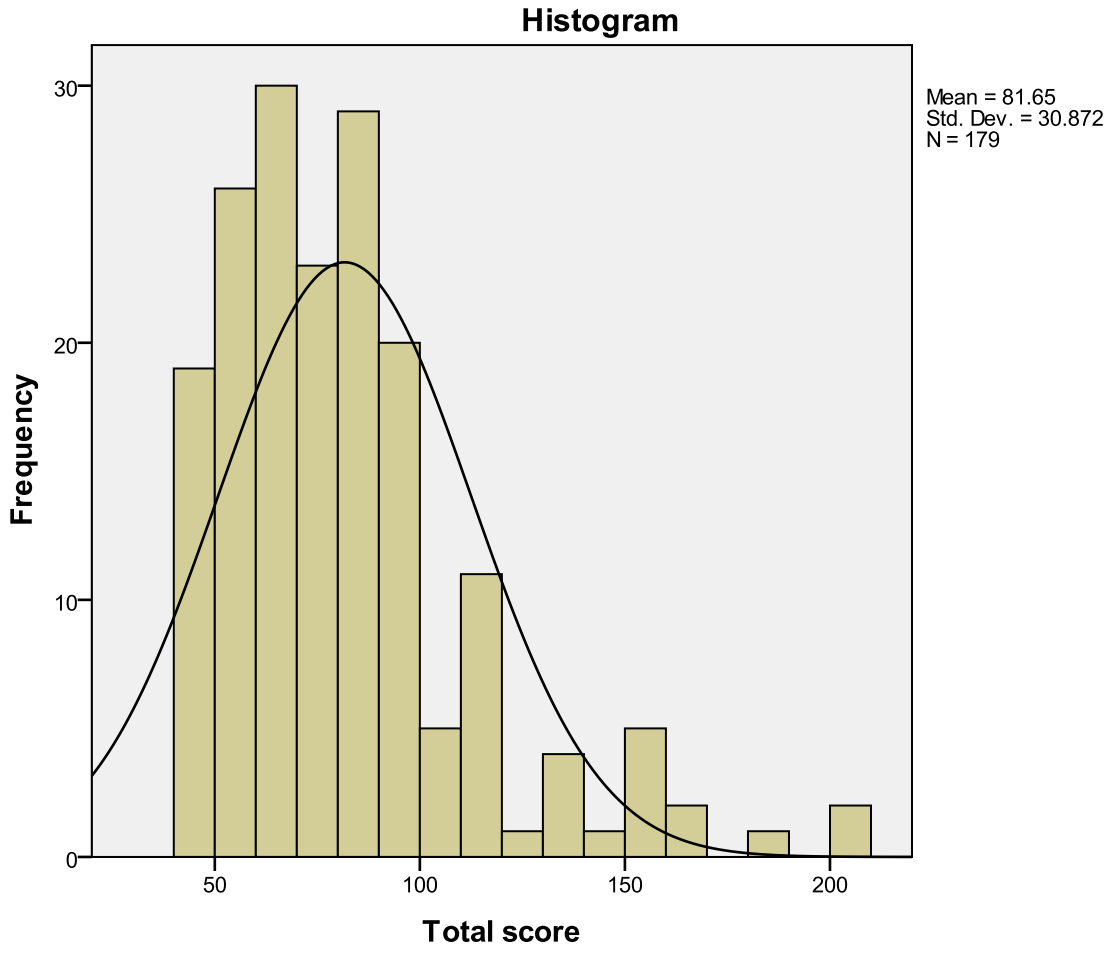

Figure 1. *Histogram displaying frequency of total aggression scores from SBI.*

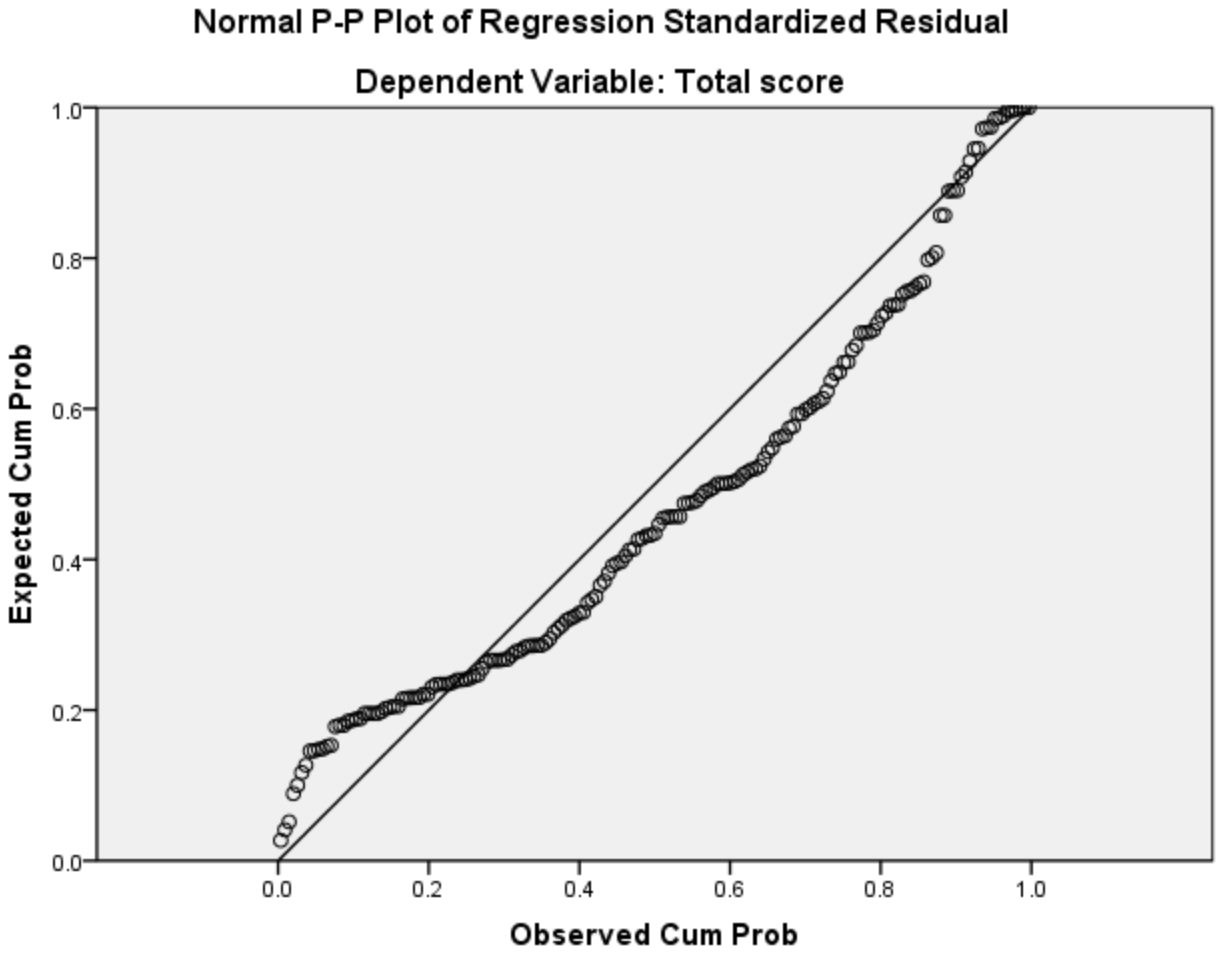

Figure 2. *Normal probability plot (P-P) of regression standardized residuals with total scores from SBI as dependent variable.*

Table 4.3

Cook's Distance, Mahalanobis Distance, and Variance Inflation Factor (VIF)

Test	Output	
Cook's Distance	.15 (Maximum)	
Mahalanobis Distance	23.41 (Maximum)	
Variable	Tolerance	VIF
Ethnicity	.551	1.814
SES	.672	1.489
Type of sport	.746	1.340
Level of participation	.533	1.877
Grade level	.516	1.937
Self-reported acts of fighting/physical aggression	.909	1.100

Results of Hierarchical Regression Analysis

The present study employed a hierarchical regression analysis to test for strength of relationships among variables. Aggression was the criterion variable and consisted of a total score from the Sport Behavior Inventory (SBI), modified version (Conroy, Silva, Newcomer, Walker, & Johnson, 2001). Aggression scores were placed into SPSS and were coded as the lone dependent variable for the study. The purpose of choosing a hierarchical method was to choose the order and to combine predictor variables that were in common (i.e., demographic), then add predictors in subsequent steps to test the strength of contributions (Gall, Gall, & Borg, 2010). Results of the hierarchical model are presented in Table 4.4.

The final results of the hierarchical regression model predicting aggression indicated that the variables placed into Block 1 (grade level and level of sport participation) explained only .4% of the variance in aggression levels and were not significant indicators of aggression in male athletes, $F_{(2, 176)} = .363$, $p = .70$. Demographic variables ethnicity and socio-economic status

were added to Block 2 and explained an additional 5.3% of the variance after controlling for the variables in Block 1, R^2 change (4, 174) = .052, p = .009. Block 2 was not considered to be a statistically significant contributor to the predictive model for aggression, $F_{(2, 174)} = 4.84$, p = .06. The predictor variable for Block 3 was type of sport (contact or non-contact) which is supported by Bandura's (1977) Social Learning Theory, where athletes who compete in contact sports model more aggressive tendencies because of the nature of contact sports, added an additional 4% of variance, R^2 change (5, 173) = .040, p = .006. Block 3 was found to be a statistically significant contributor to the hierarchical regression model, $F_{(1, 173)} = 7.67$, $p<.001$. Self-reported acts of off-the-field physical aggression/fighting was the final predictor variable, and supported Bandura's (1977) Social Learning Theory, where students with aggressive tendencies might mimic or model aggressive behavior of others while in the educational setting. This predictor variable was placed into Block 4 and added to the overall hierarchical model while controlling for all other variables. Self-reported acts of off-the-field physical aggression/fighting added an additional 14.5% of the variance, R^2 change (6, 172) = .146, p = .001. Block 4 was found to be a statistically significant contributor to the predictive model for aggression, $F_{(1, 172)} = 33.09$, $p<.001$.

An examination of independent variables indicated that, ethnicity, type of sport (contact, non-contact) and self-reported acts of off-the-field physical aggression/fighting made the most significant individual contribution on aggression scores from the SBI (Conroy et al., 2001). Standardized beta scores located in Table 4.4 suggested both positive and negative relationships. Self-reported acts of off-the-field physical aggression/fighting explained the most variance and was a significant negative predictor of aggression scores (β= -.40, p = .001). Ethnicity also moderately influenced aggression and was a negative predictor (β= -.28, p < .05), with type of

sport (β= .23, p < .01) emerging as a moderate positive predictor of aggression scores from male high school athletes. While controlling for all other variables, grade level, level of participation, and socio-economic status did not make independent, significant or moderate contributions to the aggression scores.

Table 4.4

Summary of hierarchical regression analysis

Variable	R^2 Change	*F* Change	B	*SE*	*β*	*t*	*p*
Block 1							.70
Block 2	.05	4.8					.06
Block 3	.04	7.7					.004
Block 4	.15	33.08					.001
Grade level			-2.4	2.8	-.09	-.85	.40
Level of participation			-2.8	4.5	-.06	-.62	.54
Ethnicity			-10.81	3.5	-.28	-3.1	.02
SES			11.00	5.5	.18	2.0	.09
Type of sport			15.10	5.5	.23	2.8	.006
Self-reported acts of F/PA			-31.69	5.5	-.40	-5.7	.001

Note: F/PA = Fighting/Physical Aggression
Note: Coefficients were reported when they were entered into the equation

Additional Analysis

Mean aggression scores from the Sport Behavior Inventory modified version (Conroy et al., 2001) are presented in Table 4.5. Ninth grade student-athletes averaged higher aggression scores (*M*=86.02, *SD*=38.38) than 10th grade (*M*=78.76, *SD*=21.16), 11th grade (*M*=81.06, *SD*=34.27), and 12th grade student-athletes (*M*=81.25, *SD*=26.11), indicating that younger student-athletes might possess higher aggression levels than older student-athletes. African-American student-athletes from the Ethnicity category averaged higher aggression scores

(*M*=95.97, *SD*=22.58) than Hispanics (*M*=77.04, *SD*=25.86) and Caucasians (*M*=81.16, *SD*=37.06), and scored significantly higher than Asian American student-athletes (*M*=61.80, *SD*=22.02). It should be noted that only 5 of the 179 participants in the present study identified themselves as Asian-American. Student-athletes participating in contact sports (*M*=87.17, *SD*=31.46) averaged significantly higher aggression scores than non-contact athletes (*M*=70.69, *SD*=26.18). The majority of the respondents representing the contact sport category were football players (*n*=60), which contains the highest levels of body-to-body contact. Finally, the most profound difference among aggression scores were students indicating they had received discipline within the last school year for off-field acts of fighting or physical aggression (*M*=110.58, *SD*=34.08). Students reporting that they had not participated in fights or physical aggression scored significantly lower on the aggression questionnaire (*M*=75.34, *SD*=25.98). Table 4.5 demonstrated that students who participate in more aggressive, contact sports, and who have been disciplined for fighting in the past year believed that the aggressive scenarios in the SBI (Conroy et al., 2001) were more acceptable than those who played non-contact sports and reported no off-field fighting.

Table 4.5

Mean aggression scores from SBI-modified version for each predictor variable

Predictor Variable			*95% Confidence Interval*	
	M	*SD*	*Lower*	*Upper*
Grade Level				
9th	86.02	38.38	74.21	97.84
10th	78.76	21.16	71.70	85.81
11th	81.06	34.27	71.10	91.02
12th	81.25	26.11	73.91	88.60
Level of Participation				
Freshman	85.67	36.87	68.88	102.45
Junior varsity	78.02	25.60	70.42	85.62
Varsity	82.68	31.60	76.76	88.59
Ethnicity				
African-American	95.97	22.58	87.96	103.97
Hispanic	77.44	25.86	71.40	83.47
Caucasian	81.16	37.06	72.19	90.13
Asian-American	61.80	22.02	34.22	89.38
SES				
Free lunch	80.82	23.52	75.72	85.93
No free lunch	82.73	36.09	75.37	90.08
Type of Sport				
Contact	87.17	31.46	81.51	92.84
Non-contact	70.69	26.18	63.80	77.58
Self-reported acts of F/PA				
YES	110.58	34.08	98.49	122.66
NO	75.34	25.98	71.08	79.59

Note: F/PA = Fighting/Physical Aggression

Summary

The results of the data analysis indicated several strong correlations among variables as well as statistically significant contributors to the overall model examining aggression in male high school athletes. Type of sport played (contact, non-contact) by the participants and self-

reported acts of off-the-field fighting and physical aggression were found to make significant contributions to the model. The next chapter will discuss the findings, explore the implications and limitations, and provide ideas for future research in this important area of athletics. The overall purpose of Chapter 5 is to contribute to the growing body of literature in aggression in athletes.

CHAPTER FIVE: DISCUSSION

The present study examined the relationships between aggression (criterion) and several key demographic, sport-related, and academic variables. Data was drawn from a sample of male athletes (*N*=179) located in southeast Texas who attend four different public high schools in the same geographic region. The present study only attempted to determine the strength of relationships among variables and did not attempt to ascertain causal inference. Recent aggression studies in sports have varied with the use of selected variables and participants (Coulomb-Cabagno & Rascle, 2006; Lemieux, McKelvie, & Stout, 2002; Visek & Watson, 2005). The present study was the first to use the specific compilation of predictor variables (ethnicity, socio-economic status, grade level, type of sport, level of sport participation and self-reported acts of off-the-field physical aggression/fighting) within a hierarchical regression analysis. Chapter 5 will discuss and summarize the findings of the data analysis as well as delve into study limitations, implications, and recommendations for future research.

Restatement of the Problem

Nationally, there are growing concerns surrounding the amount of violence in and out of the educational setting, along with recent increases in gruesome injuries and even death in contact sports. Adolescents spend more time viewing graphic images and have more access to violence than generations prior (Gentile, Coyne, & Walsh, 2011; Hasan, Begue, & Bushman, 2013). Within the context of athletics, there is an uptrend of serious violence and injury (Kimble, Russo, Bergman, & Galindo, 2010), even though player equipment is safer than ever before. This might equate to higher aggression levels in athletes who possess injurious intent. To support the theory of Social Learning and Aggression (Bandura, 1973; Bandura, 1977) young athletes who have access to violence from the media and in their homes and neighborhoods have

the propensity to model and mimic actions they witness. The present study attempted to support Social Learning Theory (Bandura, 1977) by combining several predictor variables not used in previous studies regarding athletic aggression. Sports aggression studies utilizing Social Learning Theory as a theoretical framework attempt to discern whether participation in sports lead to higher aggression in individuals, or, in fact, assist in properly controlling levels of aggression over time.

Summary of Findings and Relationship to Current Literature

Through the use of a non-experimental, hierarchical regression analysis, the present study examined aggression levels in male athletes participating in UIL sports in southeast Texas. The main hypothesis attempted to ascertain a relationship between six predictor variables (ethnicity, socio-economic status, type of sport, level of sport participation, grade level, and self-reported acts of off-the-field physical aggression/fighting) and the lone criterion variable, aggression. Each predictor variable was assigned to a block within the hierarchical regression model. Block 1 consisted of category/rank variables, grade level (9-12) and level of participation (varsity, junior varsity, freshman), which were unique in that they signified age and level of competition. The second block added ethnicity and SES to the model, which were significant demographic variables that help support theories of background and culture. Block 3 added type of sport (contact, non-contact) as a variable of interest within this study. This variable determined if athletes competing mainly in contact sports such as football and basketball reported higher aggression levels than participants of non-contact sports such as tennis and swimming. Block 4 added self-reported acts of off-the-field physical aggression/fighting as the final variable of interest.

Research Question

Is there a statistically significant relationship between the combination of ethnicity, and socio-economic status, type of sport, grade level, level of sport participation, and self-reported acts of off-the-field physical aggression/fighting, and levels of aggression in high school male athletes as measured by the Sport Behavior Inventory (SBI)?

H_1: The combination of ethnicity, socio-economic status, type of sport, grade level, level of sport participation, and self-reported acts of off-the-field physical aggression/fighting will have a statistically significant relationship with levels of aggression in high school male athletes.

H_{o1}: The combination of ethnicity, socio-economic status, type of sport, grade level, level of sport participation, and self-reported acts of off-the-field physical aggression/fighting will not have a statistically significant relationship with levels of aggression in high school male athletes.

This research question and the supporting hypotheses addressed the combination of all six predictor variables and their relationship with aggression. The overall *F* test suggested that the combination of predictor variables were a significant predictor of aggression in male high school athletes ($p<.05$). The predictor variables of interest, type of sport (contact, non-contact) and self-reported acts of off-the-field physical aggression/fighting made the greatest impact on the total model. These variables were placed into separate blocks during the hierarchical regression process and added significant amounts of variance. Socio-economic status made a moderate impact on the model according to β weights displayed in Table 4.4.

Within the last two decades there have been several correlational studies examining aggression in athletes (Mintah, Huddleston, & Doody, 1999; Rascle et al., 2010; Visek et al., 2010). Several of the same variables from previous studies were shared in the present study, including ethnicity and type of sport (contact, non-contact). This is the first such study to combine predictor variables type of sport and self-reported acts of off-field fighting and physical

aggression, specifically targeting male high school student-athletes. Like the present study, Rascle et al., (2010) provided respondents with scenarios about illegal acts of aggression and whether they are acceptable in the context of competition. Conversely, Rascle et al., (2010) only examined athletes competing in one sport (soccer), not multiple sports and utilized a control and experimental group prior to a soccer match. Lemieux, McKelvie, and Stout (2002) examined aggression in athletes and non-athletes at the collegiate level. Like the present study, one of the variables of interest was off-field aggression, including the reporting of fights, as well as using participants from a variety of contact and non-contact sports. Lemieux, McKelvie, and Stout (2002) indicated that respondents who reported off-field aggression scored higher in aggressive tendencies, which is aligned with the findings of the present study. What differed from the present study were the age of the participants (college – 19-24) and the use of non-athletes as a control group in a causal study. Further research might benefit from combining these specific variables (ethnicity, socio-economic status, type of sport, grade level, level of sport participation, and self-reported acts of off-the-field physical aggression/fighting) into a correlational study to examine relationships with aggression.

Sub Research Question One

RQ1a: Will there be a statistically significant contribution from grade level (9-12) and the level of sport participation (varsity, junior varsity, and freshman) to the hierarchical regression model predicting aggression levels in male high school athletes?

H_{1a}: Grade level (9-12) and the level of sport participation (varsity, junior varsity, freshman) will contribute significantly to the hierarchical regression model predicting aggression in male high school athletes.

H_{o1a}: Grade level (9-12) and the level of sport participation (varsity, junior varsity, freshman) will not contribute significantly to the hierarchical regression model predicting aggression in male high school athletes.

The predictor variables grade level and level of sport participation represented Block 1 of the hierarchical regression model. As reported in Table 4.2, there was a strong negative correlation between these two variables (r = -.68), but both were weak single negative predictors of aggression (grade level, β=-.09, level of participation, β=-.06*)*. Block 1 of the model addressed the hypothesis that grade level (9-12) and level of sports participation (varsity, junior varsity, freshman) would have a statistically significant relationship with the criterion variable, aggression. These two variables combined explained very little variance (.04%) and were not significant indicators, therefore the researcher failed to reject the null hypothesis.

In an attempt to support Social Learning Theory (Bandura, 1977), the present study sought to discern if younger athletes model aggressive behavior that is present in older, more mature athletes. From the team aspect, athletes performing at high levels of competition (varsity) might display higher levels of aggression in their chosen sport because the results are more important. The findings are contradictory to previous research that determined that age and level of participation are significant indicators (Bredemeier, Weiss, Shields, & Cooper, 1986; Chow, Murray, & Feltz, 2009; Maxwell & Visek, 2009; Oproiu, 2013; Visek & Watson, 2005). Steinfeldt and Steinfeldt (2010) utilized "year in school" (freshman, sophomore, junior, senior) as a predictor variable in a study examining athletic identity and help-seeking attitudes in high school football players. Grade level was a significant contributor to the model, which is, again, contradictory to the present study (Steinfeldt & Steinfeldt, 2010). Oproiu (2013) found that adolescents, age 13-14, displayed statistically higher levels of aggression than older athletes; age

17-18, supporting the Social Learning Theory notion that younger individuals might model aggressive behavior for acceptance by older individuals. The present study did not take into account the fact that freshman athletes are allowed to participate at the varsity level, but this is solely dependent on talent level, and the physical maturity of the freshman athlete.

Younger athletes entering high school athletics, especially in a contact sport such as football, may lack the maturity and understanding of acceptable aggression levels within the sphere of competition. Their attitudes about aggression might carry over into educational settings or non-sports venues where they may feel invincible because of the violent nature of their chosen sport. Over time, as younger athletes mature and become role models for younger athletes, aggression levels could remain the same, but controlled at a more sophisticated rate. Future research would benefit from following a cohort of young athletes throughout their high school athletic career. This will be discussed more in-depth later in the chapter.

Sub Research Question Two

RQ1b: Will there be a statistically significant contribution from ethnicity and socio-economic status (SES) to the hierarchical regression model predicting aggression levels in male high school athletes?

H_{1b}: Ethnicity and socio-economic status (SES) will contribute significantly to the hierarchical regression model predicting aggression in male high school athletes.

H_{o1b}: Ethnicity and socio-economic status (SES) will not contribute significantly to the hierarchical regression model predicting aggression in male high school athletes.

The second sub research question addressed the addition of ethnicity and SES to the hierarchical model. Both were combined to represent Block 2 of the model because they represent demographic characteristics and might support theories surrounding environment and

culture. Respondents chose from African-American, Hispanic, Caucasian, Asian-American, and other for ethnicity. To address SES, respondents stated whether they received free and reduced lunch at school. While it had more statistical significance and added more variance (5%) than the lone presence of Block 1, Block 2 did not make a statistically significant contribution to the model, therefore the researcher failed to reject the null hypothesis. A Pearson Correlation Coefficient indicated a strong positive correlation between the two variables (r = .56), but indicated minimal correlation with the criterion variable, aggression. Beta weight coefficients for block 2 suggested stronger independent relationships with aggression compared to Block 1 variables. Ethnicity (β=-.28) was a moderately strong negative predictor, while SES (β=.18) was a positive predictor of aggression levels.

Few studies exist to support or contradict the findings of the present study in regards to ethnicity and SES as predictors of aggression in male athletes. Maxwell, Visek, and Moores (2009) examined the aggression levels of North American athletes and their counterparts from Hong Kong, China. By comparing groups, it was found that athletes from North America displayed slightly higher levels of aggression than Chinese athletes. It should be considered that the demographic characteristic of SES is unique and difficult to define. This might explain the lack of current research available.

Athletes who hail from poor, ethnic neighborhoods, where aggression is more accepted and considered a necessary tool for survival, may be more prone to use higher levels of aggression during a sporting event. Contact sports might provide these male athletes an appropriate outlet for their aggressive tendencies, or could exacerbate aggressiveness beyond the field of play. As Social Learning Theory (Bandura, 1977) supports the notion of learned

behaviors from one's surroundings, future studies would benefit from thorough examinations of athletic aggression and the specific background of each participant.

Sub Research Question Three

RQ1c: Will there be a statistically significant contribution from type of sport (contact, non-contact) to the hierarchical regression model predicting aggression levels in male high school athletes?

H_{1c}: Type of sport (contact, non-contact) will contribute significantly to the hierarchical regression model predicting aggression in male high school athletes.

H_{o1c}: Type of sport (contact, non-contact) will not contribute significantly to the hierarchical regression model predicting aggression in male high school athletes.

For the purposes of this study, type of sport was operationally defined as either contact or non-contact in nature. Contact sports included any sport where body-to-body contact is purposeful and legal, where non-contact sports contain no body-to-body contact unless accidental. Type of sport was a variable of interest to the researcher of this study and was the lone predictor variable added to Block 3 of the hierarchical regression model. While only adding 4% of the variance to the overall model, type of sport yielded a moderate correlation with aggression (r = .31). With a corresponding β weight of .23, and a significance of .006 (p<.05), type of sport did significantly predict aggression in male high school athletes. In this case, the researcher rejected the null hypothesis.

The results of this section of the study replicate a pattern of significance with current literature regarding type of sport played by individual athletes (Maxwell, Visek, & Moores, 2009; Mintah, Huddleston, & Doody, 1999; Silva, 1983; Visek et al., 2010). Contact sports have been a focus of recent athletic aggression studies, and were a primary variable of interest for the

present study. Athletes competing primarily in sports where there are high levels of contact generally display higher levels of aggressive tendencies. Maxwell, Visek, and Moores (2009) utilized several survey instruments to assess aggression in male Chinese athletes. Like the present study, the use of a modified Sports Behavior Inventory (Conroy et al., 2001) indicated that type of sport had a profound effect on aggression levels (Maxwell, Visek, & Moores, 2009). Implications from these types of studies suggest that the growing profession of sports psychology might benefit from results, especially acknowledging that there is a problem with athletes who report high levels of anger, hostility, and aggression (Maxwell, Visek, & Moores, 2009).

The results of the present study are also aligned with current research supporting the notion that contact sport participants display higher levels of hostile aggression as opposed to instrumental aggression (Bredemeier, Weiss, Shields, & Cooper, 1986; Lemieux, McKelvie, & Stout, 2002). Contrary to the results of this study, Keeler (2007) and Gardner and Janelle (2002) indicated that there was little evidence that sport type (contact-non-contact) played a significant role in levels of aggression in athletes. Arguments from sports aggression researchers conclude that participants in contact sports might possess the ability to control aggression more successfully than other athletes, thus skewing results from survey instruments (Lemieux, McKelvie, & Stout, 2002). An explanation might be that participants in high contact sports such as rugby and football are more adept at knowing when hostile aggression is legal and necessary to gain an advantage over an opponent. This notion would support Social Learning Theory (Bandura, 1977) as these types of behavior might be learned and modeled within the team sport construct.

The nature of body-to-body contact in sports can have differing effects on young athletes. Some athletes might find the thrill of contact as a means to vent frustrations and anger, while others might need to be taught the proper and appropriate use of aggression during a game. Future research involving young athletes and their aggressive tendencies should pay close attention to the individual's exposure to contact sports prior to arriving in high school, as well as their desires to inflict bodily harm on opposing individuals. This may assist coaches with identifying certain types of players and their aggressive desires, and modeling proper techniques.

Sub Research Question Four

RQ1d: Will there be a statistically significant contribution from self-reported acts of off-the-field physical aggression/fighting to the hierarchical regression model predicting aggression levels in male high school athletes?

H_{1d}: Self-reported acts of off-the-field physical aggression/fighting will contribute significantly to the hierarchical regression model predicting aggression in male high school athletes.

H_{o1d}: Self-reported acts of off-the-field physical aggression/fighting will not contribute significantly to the hierarchical regression model predicting aggression in male high school athletes.

Self-reported acts of off-the-field physical aggression/fighting was the final predictor variable in this study, and, like type of sport, another variable of interest. To clarify, respondents reporting "YES" to self-reported acts of off-the-field physical aggression/fighting confirmed that they received some level of discipline in the past school year for fighting or committing an act of physical aggression against another individual. This predictor variable represented Block 4 of the hierarchical regression model. By adding an additional 15% of the variance to the overall

model, self-reported acts of off-the-field physical aggression/fighting made the most profound contribution. The corresponding β weight was -.40, with a significance of .001(p<.01), thus the researcher rejected the null hypothesis that self-reported acts of off-the-field physical aggression/fighting would not make a significant contribution to the overall model.

While there is a lack of copious research examining student-athletes' self-reporting of off-field discipline for fighting or physical aggression, the results of the present study are aligned with current research that examines issues such as moral behavior (Lemieux, McKelvie, & Stout, 2002; Shields, 1999; Steinfeldt, Rutkowski, Vaughan, & Steinfeldt, 2011). High levels of physical aggression, and even violent tendencies, are necessary in contact sports such as football, and a small documented amount of players have had difficulty remaining-non-violent off the field of play (Lemieux, McKelvie, & Stout, 2002). Shields (1999) contended that violent tendencies by contact sport participants might lead to serious injury or bodily harm both on and off the field.

The presence of Blocks 3-4 did make statistically significant contributions to the overall model. Type of sport and self-reported acts of off-the-field physical aggression/fighting accounted for a combined 19% of the variance in aggression levels reported by the participants. Each block respectively proved to be significant at the appropriate levels, therefore the researcher rejected the null hypothesis in both cases. Within the entire model, self-reported acts of off-the-field physical aggression/fighting explained the most variance and profoundly changed the regression model when it was entered into the final block. This might suggest that student-athletes who have reported that they received discipline in school for acts of fighting and physical aggression might be more aggressive than those student-athletes who did not. It should also be noted that students who participate in fights or acts of physical aggression away from the

field of play run the risk of removal from an athletic program depending on the school code of conduct. Athletics, in fact, might be utilized as a positive deterrent from erroneous behavior, assisting aggressive individuals with appropriate social decisions. It was not known whether any participant from the present study who admitted to fighting or physical aggression was removed from participation from their chosen sport as a result of their actions. Awareness of specific codes of conduct and behavioral expectations of athletes would be beneficial variables in future studies

Each of the aforementioned sports aggression studies utilized Social Learning Theory (Bandura, 1977) as either the lone theoretical framework, or one of multiple theories to ground current research. Sports are very popular in countries across the world, especially in America, where children begin competing as early as 4 years old. Children and adolescents model behavior they learn from a variety of sources, including their family and community members, playgrounds, and from other students in the educational setting. Coaches and parents have great influence on social skills as well. Although age, ethnicity, and SES did not have a significant effect in this study, future studies might use these variables in a more copious manner.

Implications

The results of the present study yielded implications that might be useful in future sports aggression research. The most profound implication from this study was that self-reporting of previous acts of aggression such as fighting was the strongest predictor of aggression. Male athletes who reported that they received discipline for fighting within the last school year, on average scored higher on the aggression questionnaire. A closer look at the data for this study indicated a much smaller number of athletes reporting fighting/physical aggression (n=33) than athletes who reported they did not participate in a fight or act of physical aggression (n=146). A

solid question from these results would be the actual injurious tendencies of the 33 participants who reported fighting within the last year. Are these the same athletes that intend to use hostile aggression as a means to an end by injuring an opposing player? Future studies would greatly benefit from attempting to answer such a question. The average score on the SBI (Conroy et al., 2001) for the athletes reporting fighting/physical aggression was 101, while the remaining athletes had an average score of 84. While coaches of contact sports such as football and basketball invite high levels of aggression as a component to success, most would frown upon athletes fighting and committing physical acts of aggression in the educational setting (Hartmann & Massoglia, 2007). Coaches and school personnel might find this type of information useful when speaking to athletes who have received discipline for fighting and aggressive acts. Past studies have focused on deviance committed by high school athletes off the field of play (Hartmann & Massoglia, 2007; Steinfeldt, Vaughan, LaFollette, & Steinfeldt, 2012) but none have yet to focus solely on fighting and violence within the educational setting.

Serious bodily injury is a concern in all levels of athletics, especially sports allowing any type of body-to-body contact (Mueller & Colgate, 2013). Results from the present study displayed a strong correlation between contact sport participants (i.e. football) and higher levels of aggression. Although the results were not significant (see Table 4.2), the data suggested that contact sport participants agreed more with the aggressive scenarios in the questionnaire. The average male high school athlete is bigger, stronger, and faster than his counterpart from 30 years ago, and he is able to afflict more damage to a competitor as a result of this phenomenon (Johnson, Burns, & Azevedo, 2012; Larsen, 2013; Shankar, Fields, Collins, Dick, & Comstock, 2007). Even though protective equipment for contact sports is far more advanced, the pure strength and size of athletes today still has an effect on competition. Students who display

higher levels of aggression may have the propensity to inflict injury more often. Student-athletes displaying higher than normal aggression levels may also be candidates to undertake anabolic steroid use to further their careers (Chantal, Soubranne, & Brunel, 2009). Coaches, trainers and school personnel would benefit from a thorough study in the areas of aggression and injury with a generalized population of student-athlete.

Limitations

No research study is without limitation, and the present study may provide interested researchers with ideas on how to close important gaps. Because of the geographical location of the study, it was difficult to make broad generalizations from the results. Southeast Texas is culturally diverse, but has different levels of interest in sports; therefore, students may have answered survey questions in a different manner compared to students in another region of the country. Their upbringing, access to types of athletic events, and community interests may have had an effect on how they presented their true sentiments. The present study only analyzed students who were active participants in interscholastic athletics and did not attempt to compare them with other groups of individuals, such as those students who do not participate in athletic events. This may have limited effectiveness through bias and partiality. Age (14-19) and grade level (9-12) may have been a factor as the present study only surveyed students enrolled in high school. To control for the possible limitations of a convenience sample of athletic participants, the sample size was increased by adding a fourth high school that is ethnically heterogeneous and geographically similar to the other three high schools.

The sample size for the present study was small and its location represented a small section of the southeast United States. Four high schools within three school districts agreed to participate, but not all high schools followed prescribed directions carefully. This inaction made

it difficult for student-athletes to respond to the survey within the allotted window. Certain schools took the study more seriously, so there was an imbalance of representation, thus limiting effectiveness.

The total scores from the survey instrument were totaled at the end of the data collection period, and there was no attempt to investigate an actual combination of specific questions from the modified version of the Sport Behavior Inventory (Conroy et al., 2001). This was deemed appropriate so that simple results would be clear and concise. Previous studies have retrieved scores from one or more of the specific questions from the SBI and examined them thoroughly in the analysis process. The actual validity of the modified version of the SBI used for this study must also be taken into consideration when discussing study limitations.

Another possible limitation to the present study is the state of mind of each respondent during the data collection process. Student-athletes were directed to complete a modified version of the SBI (Conroy et al., 2001) while they were in a relaxed educational setting (computer lab). No respondent completed the survey on the same day that they competed in their sport of choice. Because of the timing of the survey period several players who competed solely in contact sports had either completed their season, or had yet to begin district competition, thus limiting the true effects of competing in contact sports. While Texas is considered one of the premier states for high school football talent, none of the four participating schools had qualified for state playoffs. Lack of aggression among players on losing teams might factor into programs that lose consistently each year. Future research might take successful winning programs into consideration.

Tediousness of task and lack of interest were another limitation to the present study. While care was taken to ensure the survey instrument was easy to understand, respondents

ranged in age from 14-19, and may have found the process to be arduous. Adolescent males are reported to have between 8-20 minutes of attention to one task, depending on the presence of a disability such as Attention Deficit-Hyperactivity Disorder (Donahue, 2004). The present study did not attempt to determine any type of learning or health related disability that may have impacted the completion of the questionnaire. Respondents may have answered randomly and without carefully reading the questions in order to finish quickly. Some student-athletes may have answered questions that do not reflect the actual truth and might have attempted to portray themselves differently. Participants not interested in the study may have answered questions completely opposite than how they actually view aggressive acts. To control for this limitation, the researchers and coaches of three of the site schools created an incentive for the athletes to enjoy once the data collection has ceased. Two schools provided athletes with snacks once they successfully completed the survey. The third school provided participants with the opportunity to leave off-season practice earlier than normal schedule. Several surveys were not completed and were determined to be invalid during the collection and analysis period. Future research might incorporate a shorter questionnaire that piques the interest of the respondents from beginning to end.

The criterion variable, aggression, was tested strictly from an athletic perspective, but students who participated in the study may have come from extreme aggressive circumstances within their homes and neighborhoods, and possess innate aggressive tendencies that could have limited the authenticity of answers. No question in the survey instrument specifically addressed student home-life or neighborhood demographics.

According to Gall, Gall, and Borg (2010), correlational research studies do not allow for causal inference. While predictor variables within the present study may have been highly

correlated, there is no proof of a causal relationship between the two (Gall, Gall, & Borg, 2010). This study utilized six predictor variables (ethnicity, SES, type of sport, level of sport participation, grade level, and self-reported discipline for aggressive acts) that may have hindered the effectiveness of relationships with the criterion variable (aggression). Future studies using a causal approach might assign an experimental group to take the same survey immediately before or after a game where levels of aggression might be more profound, while a control group takes the survey in a normal setting.

Recommendations for Further Research

To help close the current gap in research regarding aggression in high school athletes, a study reaching a more generalizable sample would be beneficial. The present study sampled only athletes from southeast Texas, which is considered one of the "hotbed" regions for football in the country (McLaughlin, 2013). Sampling particular regions in the country that are not as dependent on one sport might assist researchers with surveying aggression more effectively (e.g., basketball in Indiana, wrestling in Iowa). Many new contact sports such as field hockey, ice hockey, and lacrosse are new to the list of high school sports, but are regional in interest. These new contact sports might provide new insight into the search for differences between hostile and instrumental aggression, or for drawing a comparison with traditional contact sports such as wrestling and football.

Future research might consider a thorough determination of aggression levels immediately prior to or immediately following a game or match. The present study asked student-athletes to complete the aggression questionnaire away from the field of play and when their emotional and competitive levels were normal, or at rest. To assess the true differences between hostile and instrumental aggression (Stanger, Kavussanu, & Ring, 2012) a study might

benefit from determining if athletes have the ability to control aggression levels right before the start of a game or once they have won or lost a game. Most studies involving aggression in sports assess levels when athletes are in a state of docility or in off-season. While this process might be difficult to circumnavigate protective coaches and personnel, its results can benefit the growing body of research in sports aggression.

To examine the causes of high levels of aggression within athletics, a study involving an experimental and control group of participants might warrant consideration. For example, a treatment in the form of video clips shown to an experimental group might illicit more aggressive behavior because of the visual attributes. The control group would not be exposed to any visual cues during the experimental period. Another treatment administered to an experimental group might be the use of home-field advantage prior to a game or match. Crowd noise has been the focus of recent research (Carron, Loughhead, & Bray, 2005) and may contribute to aggression levels among athletes.

It is also recommended that a thorough longitudinal study take place where cohorts of freshman athletes participating in contact sports are examined throughout their four years in high school. Several groups of individuals, including specific ethnic groups, athletes who report they have been involved in fights and athletes with emotional disabilities, could be examined to see if the nature of aggressive sports helps or hinders their growth into manhood. It is expected that some athletes will become more aggressive the longer they participate in contact sports, thus suggesting the possible negative characteristics, while other athletes might benefit from contact sports as an appropriate outlet for their aggressive tendencies, and are able to keep it contained to the field of play only. Longitudinal studies might also benefit collegiate athletic programs as

talented athletes with aggressive tendencies and injurious intent can be singled out and taught appropriate methods of aggression.

Finally, it is suggested that copious research be dedicated to specific types of sports and the role of team sport vs. individual sport, as well as the role of the coach. Other than wrestling, most contact sports are considered team sports where Social Learning Theory (Bandura, 1977) is abound with possibilities of learned behavior among teammates and coaches. As team sports continue to grow in popularity, aggression experts might benefit from internal examinations of how teammates develop appropriate aggressive behaviors prior to a game or match, and how other members of the team respond. Coaches may play a part in the development of appropriate aggression as well as assisting with players who display excessive hostile aggression and injurious intent.

Conclusion

The present research study examined the relationships between six predictor variables (ethnicity, SES, type of sport, level of sport participation, grade level, and self-reported acts of fighting/physical aggression) and aggression. Male high school athletes who played contact sports and reported that they had received discipline for fighting or an aggressive act within the last year scored higher on the aggression questionnaire, which were the only predictor variables with a statistically significant relationship. School personnel interested in controlling aggression within the educational setting might benefit from focusing on athletes who fight or commit physically aggressive acts against other students. These particular athletes might feel higher levels of invincibility or privilege because of their status as athletes and act differently from other members of the student body. Aggressive behaviors may also transfer beyond the educational setting and into homes and neighborhoods, with much concern. The present study

was distinct from other recent sports aggression studies because of the combination of predictor variables. As high school athletics continue to gain popularity across the country, these variables will remain important elements of future research studies.

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APPENDIX

Appendix A

Permission Letter from Participating Districts

[redacted] **INDEPENDENT SCHOOL DISTRICT**

[redacted] • [redacted]

[redacted]

October 22, 2013

Jeff Hutchinson
[redacted]
jmhutchinson@liberty.edu

Dear Mr. Hutchinson:

You have permission to contact our Athletic Director [redacted] for participants in your research. [redacted] can be reached by phone at [redacted] or by email at [redacted]@[redacted]isd.org. Please make certain participants are presented with the "informed consent information prior to participating" and that their information is kept confidential.

Respectfully,

[redacted]
Superintendent

Copy: [redacted], [redacted] ISD Athletic Director
Enclosure: Letter Requesting Permission to Conduct Research

[redacted]
Superintendent of Schools

October 14, 2013

To Whom It May Concern,

Please accept this letter as notification that Jeff Hutchinson has been granted permission to conduct research at [redacted] and [redacted] High Schools. The purpose of this research relates to his dissertation and degree through Liberty University.

The title of Mr. Hutchinson's study is: Exploring the Relationship between Demographic and Sport Related Variables and Aggression: An Examination of Male Student-Athletes Enrolled in Texas High Schools.

If you need additional information, please feel free to contact me.

Sincerely,

[redacted]

/al

[redacted] PH [redacted] *www.*[redacted]

[redacted]

[redacted]
Superintendent

[redacted]
Assistant Superintendent

[redacted]
Assistant Superintendent

October 23, 2013

Mr. [redacted]
[redacted]
[redacted] TX [redacted]

Dear Mr. Hutchinson:

I am writing in response to your letter dated October 14, 2013. On behalf of [redacted], our high school principal ([redacted] and athletic director ([redacted] have agreed to participate in your research project, "*Exploring the Relationship Between Demographic and Sport Related Variables and Aggression: An Examination of Male Student-Athletes Enrolled in Texas High Schools.*" Please contact our Athletic Director, [redacted], via email at [redacted]@[redacted]isd.org in early December to coordinate your study. We are unable to commit the time and resources until after the Thanksgiving holidays.

Sincerely,

[redacted]

[redacted], Superintendent
[redacted] ISD

cc: [redacted]
[redacted]

[redacted] Street, [redacted] Texas [redacted]
[redacted]

Appendix B

Demographic Questionnaire

1. **Grade in school: 9 10 11 12**

2. **Ethnicity:**

   African-American Hispanic Caucasian Asian Other

3. **Do you receive free or reduced price lunch at school:**

   YES NO

4. **Please circle all sports you participated in while in high school:**

   Baseball Basketball Football Golf Swimming Tennis

   Powerlifting Track & Field Cross Country Soccer Wrestling

5. **Which would you consider to be your main sport (must pick only one):**

   Baseball Basketball Football Golf Swimming Tennis

   Powerlifting Track & Field Cross Country Soccer Wrestling

6. **What level of participation:**

   VARSITY JUNIOR VARSITY FRESHMAN

7. **Have you ever received discipline of any kind for physical aggression or fighting off the field (in school, at home, or elsewhere) over the last year?**

   YES NO

Appendix C

Modified Version of Sport Behavior Inventory

SCENARIO #1-FOOTBALL

After reading the situation described below, circle the number that best describes the way you feel about the situations. If you do not play the sport described, answer the way you would feel if you did play the sport.

After the opposing team's running-back is tackled and on the ground, a defensive lineman grabs the players foot and twists it.

	Never OK		Seldom OK		Often OK		Always OK	
A. Is it OK for YOU to do this when you play this sport?	1	2	3	4	5	6	7	8
B. Is it OK for you to do this when playing this sport if you are:	Never OK		Seldom OK		Often OK		Always OK	
1. A high school player?	1	2	3	4	5	6	7	8
2. A college player?	1	2	3	4	5	6	7	8
3. A professional player?	1	2	3	4	5	6	7	8
C. Is it OK for a player to do this in the following situation?	Never OK		Seldom OK		Often OK		Always OK	
4. If they know they won't be caught by the referee?	1	2	3	4	5	6	7	8
5. During a championship game?	1	2	3	4	5	6	7	8
6. If someone from the other team did it first?	1	2	3	4	5	6	7	8
7. If this action results in the other player being seriously injured?	1	2	3	4	5	6	7	8

SCENARIO #2-BASKETBALL

After reading the situation described below, circle the number that best describes the way you feel about the situations. If you do not play the sport described, answer the way you would feel if you did play the sport.

A basketball center, who has been out-rebounded by his opponent all game, intentionally gives his opponent a hard elbow in the ribs as the ball comes off the rim.

	Never OK		Seldom OK		Often OK		Always OK	
A. Is it OK for YOU to do this when you play this sport?	1	2	3	4	5	6	7	8
B. Is it OK for you to do this when playing this sport if you are:	Never OK		Seldom OK		Often OK		Always OK	
1. A high school player?	1	2	3	4	5	6	7	8
2. A college player?	1	2	3	4	5	6	7	8
3. A professional player?	1	2	3	4	5	6	7	8
C. Is it OK for a player to do this in the following situation?	Never OK		Seldom OK		Often OK		Always OK	
4. If they know they won't be caught by the referee?	1	2	3	4	5	6	7	8
5. During a championship game?	1	2	3	4	5	6	7	8
6. If someone from the other team did it first?	1	2	3	4	5	6	7	8
7. If this action results in the other player being seriously injured?	1	2	3	4	5	6	7	8

SCENARIO #3-BASEBALL

After reading the situation described below, circle the number that best describes the way you feel about the situations. If you do not play the sport described, answer the way you would feel if you did play the sport.

In a baseball game, a batter hits a ground ball to the second baseman. While running to first base, that batter sees that he will be thrown out and intentionally knocks the first baseman to the ground.

	Never OK		Seldom OK		Often OK		Always OK	
A. Is it OK for YOU to do this when you play this sport?	1	2	3	4	5	6	7	8
B. Is it OK for you to do this when playing this sport if you are:	Never OK		Seldom OK		Often OK		Always OK	
1. A high school player?	1	2	3	4	5	6	7	8
2. A college player?	1	2	3	4	5	6	7	8
3. A professional player?	1	2	3	4	5	6	7	8
C. Is it OK for a player to do this in the following situation?	Never OK		Seldom OK		Often OK		Always OK	
4. If they know they won't be caught by the umpire?	1	2	3	4	5	6	7	8
5. During a championship game?	1	2	3	4	5	6	7	8
6. If someone from the other team did it first?	1	2	3	4	5	6	7	8
7. If this action results in the other player being seriously injured?	1	2	3	4	5	6	7	8

SCENARIO #4-SOCCER

After reading the situation described below, circle the number that best describes the way you feel about the situations. If you do not play the sport described, answer the way you would feel if you did play the sport.

In a soccer game, a corner kick sails through the air, giving the offense an excellent chance to score. As the ball falls onto the field of play, right in front of the goal, a defender intentionally kicks an offensive player in the knee.

	Never OK		Seldom OK		Often OK		Always OK	
A. Is it OK for YOU to do this when you play this sport?	1	2	3	4	5	6	7	8
B. Is it OK for you to do this when playing this sport if you are:	Never OK		Seldom OK		Often OK		Always OK	
1. A high school player?	1	2	3	4	5	6	7	8
2. A college player?	1	2	3	4	5	6	7	8
3. A professional player?	1	2	3	4	5	6	7	8
C. Is it OK for a player to do this in the following situation?	Never OK		Seldom OK		Often OK		Always OK	
4. If they know they won't be caught by the referee?	1	2	3	4	5	6	7	8
5. During a championship game?	1	2	3	4	5	6	7	8
6. If someone from the other team did it first?	1	2	3	4	5	6	7	8
7. If this action results in the other player being seriously injured?	1	2	3	4	5	6	7	8

SCENARIO #5-FOOTBALL

After reading the situation described below, circle the number that best describes the way you feel about the situations. If you do not play the sport described, answer the way you would feel if you did play the sport.

A wide receiver catches a pass and, after falling to the ground, the referee blows the whistle. The defensive back who is covering him purposefully drives the top of his helmet into the receiver's back.

	Never OK		Seldom OK		Often OK		Always OK	
A. Is it OK for YOU to do this when you play this sport?	1	2	3	4	5	6	7	8
B. Is it OK for you to do this when playing this sport if you are:	Never OK		Seldom OK		Often OK		Always OK	
1. A high school player?	1	2	3	4	5	6	7	8
2. A college player?	1	2	3	4	5	6	7	8
3. A professional player?	1	2	3	4	5	6	7	8
C. Is it OK for a player to do this in the following situation?	Never OK		Seldom OK		Often OK		Always OK	
4. If they know they won't be caught by the referee?	1	2	3	4	5	6	7	8
5. During a championship game?	1	2	3	4	5	6	7	8
6. If someone from the other team did it first?	1	2	3	4	5	6	7	8
7. If this action results in the other player being seriously injured?	1	2	3	4	5	6	7	8

SCENARIO #6-BASKETBALL

After reading the situation described below, circle the number that best describes the way you feel about the situations. If you do not play the sport described, answer the way you would feel if you did play the sport.

A point guard is dribbling down the court on a fast-break after stealing a ball from his opponent. As the point guard goes in for a lay-up, his opponent intentionally knocks his legs out from under him.

	Never OK		Seldom OK		Often OK		Always OK	
A. Is it OK for YOU to do this when you play this sport?	1	2	3	4	5	6	7	8
B. Is it OK for you to do this when playing this sport if you are:	Never OK		Seldom OK		Often OK		Always OK	
1. A high school player?	1	2	3	4	5	6	7	8
2. A college player?	1	2	3	4	5	6	7	8
3. A professional player?	1	2	3	4	5	6	7	8
C. Is it OK for a player to do this in the following situation?	Never OK		Seldom OK		Often OK		Always OK	
4. If they know they won't be caught by the referee?	1	2	3	4	5	6	7	8
5. During a championship game?	1	2	3	4	5	6	7	8
6. If someone from the other team did it first?	1	2	3	4	5	6	7	8
7. If this action results in the other player being seriously injured?	1	2	3	4	5	6	7	8

Appendix D

Consent Form

Exploring the relationship between demographic and sport related variables on Aggression: An examination of male student-athletes enrolled in Texas high schools

Jeff Hutchinson
Liberty University
Department of Education

Your child is invited to be in a research study of aggression in male high school athletes. You were selected as a possible participant because you currently are participating in one or more interscholastic sports for your high school. I ask that you read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by Jeff Hutchinson from Liberty University department of Education.

Background Information:

The purpose of this study is to examine aggression in male high school athletes. While there have been several studies examining aggression among college and professional athletes, there is very little research that looks at high school athletes. Aggression is considered by many of your coaches to be an important part of winning, and I am interested in what makes a particular athlete more aggressive than another. For example, are football players more aggressive than a swimmer by nature of their sport? In other words, does the fact that a sport has high levels of legal contact make that player more aggressive than a player in a sport where there is no contact?

Procedures:

If you agree for your child to participate in this study, I would ask you to do the following: Please sign this parental consent form and instruct your child to return it to me on the day of the school visit. At no time will your child be asked to identify themselves by name or identification number. The survey will ask specific questions about aggression within the context of athletics. There will be six sport related scenarios for your child to read, and then answer some simple questions. The survey should take no longer than 25 minutes to complete.

Risks and Benefits of being in the Study:

The risks are no more than the participant would encounter in everyday life.

The benefits to participation will assist your coaches, teachers, and school administrators to understand how athletes of your age group view aggression as a necessary tool for competition, with hopes that aggression remain on the field of play and does not become in the educational setting or in your community.

Confidentiality:

The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely and only the researcher will have access to the records.

Voluntary Nature of the Study:

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University or your local school district if you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

Contacts and Questions:

The researcher conducting this study is Jeff Hutchinson. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact him at [redacted]. Feel free to contact [redacted], Faculty Advisor, at [redacted].

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd, Suite 1837, Lynchburg, VA 24515 or email at irb@liberty.edu.

You will be given a copy of this information to keep for your records.

Statement of Consent:

I have read and understood the above information. I have asked questions and have received answers. I consent to allow my child to participate in this study.

Signature of parent or guardian: _____ Date: _____

Signature of student: _____ Date: _____

Signature of Investigator:_____ Date: _____

IRB Code Numbers: 1691.102813

IRB Expiration Date: 10/28/2014

Appendix E

Recruitment Letter

November 11, 2013

Dear Parent or Guardian,

As a graduate student in the Department of Education at Liberty University, I am conducting research as part of the requirements for a Doctorate in Education, and I am writing to invite your child to participate in my study.

If you choose to allow your child to participate, they will be asked to complete a survey online with their peers in a supervised setting. It should take approximately 25 minutes for your child to complete the procedure[s] listed. Your child's participation will be completely anonymous, and no personal, identifying information will be required.

Other designated staff members from your child's school and I will thoroughly read the instructions on the day of the site visit, and then allow your child ample opportunity to read and answer the questions related to athletes and aggression levels. Please allow me once again to assure you that confidentiality is of utmost importance, and your child will never be asked to identify themselves to me or on the survey itself.

An informed consent document is attached to this letter. The informed consent document contains additional information about my research. Please review and sign the informed consent document and instruct your child to sign and return it to me at the time of the school visit.

Sincerely,

Jeff Hutchinson
Liberty University
[redacted]

Appendix F

IRB Approval Letter

October 28, 2013

Jeff Hutchinson
IRB Approval 1691.102813: Exploring the Relationship Between Demographic and Sport-Related Variables and Aggression: An Examination of Male Student Athletes Enrolled in Texas High Schools

Dear Jeff,
We are pleased to inform you that your above study has been approved by the Liberty IRB. This approval is extended to you for one year. If data collection proceeds past one year, or if you make changes in the methodology as it pertains to human subjects, you must submit an appropriate update form to the IRB. The forms for these cases were attached to your approval email.

Please retain this letter for your records. Also, if you are conducting research as part of the requirements for a master's thesis or doctoral dissertation, this approval letter should be included as an appendix to your completed thesis or dissertation.

Thank you for your cooperation with the IRB, and we wish you well with your research project.
Sincerely,

Fernando Garzon, Psy.D.
Professor, IRB Chair
Counseling

[redacted]

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