2018

Exploring Sports Participation and Sexual Risk Behaviors in High School Males

Jessica L. Dupree
Walden University

Walden University

College of Health Sciences

This is to certify that the doctoral study by

Jessica Dupree

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Jasmine Ward, Committee Chairperson, Public Health Faculty
Dr. Vasileios Margaritis, Committee Member, Public Health Faculty
Dr. Robin Sneed, University Reviewer, Public Health Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2018

Abstract

Exploring Sports Participation and Sexual Risk Behaviors in High School Males

by

Jessica L. Dupree

MPH, University of North Texas Health Science Center School of Public Health, 2013

BS, Agnes Scott College, 2011

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Public Health

Walden University

May 2018

Abstract

Casual sex culture, also known as hook-up culture, is an experience adversely affecting teens in America. The intent of this study was to test the association between sports participation and sexual risk behaviors among high school males. For the purpose of this study, sports participation, the independent variable, was defined by having played on a sports team in the last 12 months. The sexual risk behaviors, dependent variables, were defined by sexual engagement with multiple partners, drug and alcohol use before intercourse, and sex without condoms. The ecological model provided the theoretical foundation for the study. Secondary analysis of the 2015 Youth Risk Behavioral Surveillance System using logistic regression was employed to test if there was an association between sports participation and sexual risk behaviors in 7,749 high school males. Using regression analysis, a significant association was found between sports participation and abstinence status, number of sexual partners, and drug and alcohol use at last sexual intercourse. As the number of sports teams increased, the number of abstinent participants increased, the number of sexual partners decreased, and the number of participants who used drugs and alcohol at last sexual intercourse decreased. However, there was no association between sports participation and condom use at last sexual intercourse. Recommendations for next steps include using sports programs as a vehicle to influence behavior change. This study aimed to promote social change by improving the understanding of how sports programs benefit individuals, families, and communities from reducing sexual risk behaviors in teen males.

Exploring Sports Participation and Sexual Risk Behaviors in High School Males

by

Jessica L. Dupree

MPH, University of North Texas Health Science Center School of Public Health, 2013

BS, Agnes Scott College, 2011

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Public Health

Walden University

May 2018

Dedication

This is work is dedicated to future leaders in the field of Public Health.

Acknowledgments

I would like to thank the faculty, Dr. Margaritis, Dr. Ward, Dr. Hatway, Dr. Anderson, family members, and friends who have helped me reach this point in my academic career.

Table of Contents

List of Tables

List of Figures

Section 1: Foundation of the Study and Literature Review

Introduction

Casual sex culture (i.e., hook-up culture) is an experience adversely affecting youth in America (Joshi, Peter, & Valkenburg, 2014; Olmstead, Roberson, Pasley, & Fincham, 2015). With the high rates of STDs and other unintended consequences of sexual risk behavior, it is important to explore prevention and reduction methods that may deter or prevent these sexual risk behaviors. Although a vast majority of teenage sexual health initiatives are created with teenage females in mind, males are often the initiators of sexual encounters (Gruchow & Brown, 2011). Previous researchers have examined sexual risk independent of sports participation (Deaner et al., 2012; Taylor & Turek, 2010); however, in this quantitative study, I added to the aforementioned literature by exploring whether there is an association between sports participation and sexual risk behaviors in high school males. According to the Centers for Disease Control and Prevention (CDC), the major consequences of this culture are the high rates of sexually-transmitted diseases (STDs; CDC, 2015).

I derived the variable definitions in this study from the 2015 Youth Risk Behavioral Surveillance System (YRBSS) code book. Sports participation is defined as having played on a sports team in the last 12 months (Kann et al., 2016). Sexual risk behaviors are defined by sexual engagement with multiple partners, drug and alcohol use before intercourse, and sex without condoms (Kann et al., 2016). Using these variables, the results of this quantitative study can promote social change by increasing current understandings of the role sports programs have in reducing sexual risk behaviors. This

section will include the problem statement, significance, nature of study, theoretical foundation, literature review, data analysis plan, research questions, hypotheses, key definitions, assumptions, scope, and delimitations.

Problem Statement

The CDC (2016) estimated that STDs account for $16 billion in healthcare costs, with the majority of the cost dedicated to those aged 14–24 years old. Despite the Healthy People 2020 initiative beginning the century with aims to focus and prioritize responsible sexual behavior as a leading health indicator, efforts to reduce sexual risk behaviors among U.S. teens have yet to meet national objectives (Leading Health Indicators for Healthy People 2020, 2016). Most noteworthy are the significant disparities of risk behaviors and STD outcomes observed between genders (CDC, 2016a).

Teen males engage in various sexual risks at rates much higher than their female counterparts (CDC, 2016). Previous studies have linked male engagement in sexual risk to hormonal rush adjustments and social pressures that come along with age and stages of life (Johnson, Crosnoe, & Elder, 2011). Researchers have suggested that some teens are straying away from sexual encounters within committed relationships and moving towards more casual sexual encounters, also known as hooking up (Joshi et al., 2014; Olmstead et al., 2015). The gaps in research related to risky teen sexual health behaviors are further exemplified in the Healthy People 2010 and 2020 data.

Based on Healthy People 2020 data from 2006–2013, there was a 1.5% decrease in condom use at first sexual intercourse among teen males aged 15–19 (79.6% to 78.1%). This difference represents inadequate progress towards the Healthy People 2020

(2016) objective target of 87.6%. Conversely, the data from 2006–2013 showed an increase in teen females aged 15–19 who used condoms at first sexual intercourse, from 68% to 72.4%, moving closer to the target of 74.68% (Healthy People 2020, 2016). In 2015, males also experienced higher STD rates compared to females (CDC, 2016a). The chlamydia and gonorrhea rates for males between the ages of 15 and 19 increased by 6.3% and 10.1% respectively, while the same was true for the females, at much smaller percentages, 1.5% and 2.4% respectively (CDC, 2015). These rates are particularly important as evidence has suggested engagement in risky sexual activity in the early teen years is positively associated with sexual risk behaviors into adulthood (Dariotis et al., 2011). Observable differences may be caused by the lack of attention to gender-based approaches to prevent sexual risk behaviors.

Sports participation has been identified as a protective factor for various teen health risk behaviors (Deaner et al., 2012; Taylor & Turek, 2010). As such, with this study, I aimed to discover if there is an association between sports participation and sexual risk behaviors. The results of this study add to the literature and practice by enhancing understanding of sports participation as a targeted youth development intervention methodology in efforts to reduce sexual risk behaviors amongst high school male athletes. This research was informed by the theoretical constructs of the ecological model, which followed an important recommendation from the CDC (2015) to investigate and create interventions aimed at reaching the sexually at-risk adolescents from not just an individual perspective, but from a social perspective.

Purpose Statement

The purpose of this secondary quantitative research study was to explore the relationship between sports participation status of high school males and their sexual risk behavior status. The target population was U.S. high school males. This population was appropriate for this study as research has found that those people between the ages of 15 and 24 account for 50% of all new STDs (CDC, 2015). Furthermore, in 2014, the chlamydia and gonorrhea rates for males between the ages of 15 and 19 were 718.3 and 221.1 cases per 100,000 males respectively (CDC, 2015).

The results of this study may help increase the understanding of how sports programs benefit individuals, families, and communities by reducing sexual risk behaviors in teen males. One benefit of sports programs includes the involvement of community members, such as teachers and coaches, for the promotion of healthy relationships and a decrease in sexual risks (Johnson et al., 2014; Secor-Turner, Randall, Christensen, Jacobson, & Loyola Meléndez, 2017; Ye Hoon, Seunghun, & Youngjun, 2017). An original contribution could be made from this research by narrowing the focus from all risky behaviors to only sexual risk behaviors in high school males. Professional application can occur through interventions that utilize community factors to deter sexual activity in teen males. This includes after-school programs in the community that promote healthy relationships and decrease sexual risk behaviors in teen males. The dependent variables for this study were teens' sexual activity status and sexual risk behaviors including drug and alcohol use before intercourse and sex without condoms. The independent variable was sports participation status. I included the covariates of age,

grade, and race to provide a foundation for the interpretation of the results and influence the research questions and hypothesis.

Research Questions and Hypothesis

My intent with this quantitative study was to test the relationship between the independent variable of teen male sports participation, as measured by their response to the number of sports teams they have participated in over the last 12 months, and the dependent variables of the sexual activity status of the teen males, their sexual engagement with multiple partners, drug and alcohol use before intercourse, and sex with out condoms. The following four research questions guided this study:

RQ1: Is there association between sports participation and sexual abstinence among high school males?

$H_0$1: There is no association between participation in sports and sexual abstinence among high school males.

H_a1: There is an association between participation in sports and sexual abstinence among high school males.

RQ2: Is there association between sports participation and number of sexual partners among high school males?

$H_0$2: There is no association between participation in sports and number of sexual partners among high school males.

H_a2: There is an association between participation in sports and number of sexual partners among high school males.

RQ3: Is there association between sports participation and drug and alcohol use before intercourse among high school males?

$H_0$3: There is no association between participation in sports and drug and alcohol use before intercourse among high school males.

H_a3: There is an association between participation in sports and drug and alcohol use before intercourse among high school males.

RQ4: Is there association between sports participation and sex without condoms among high school males?

$H_0$4: There is no association between participation in sports and sex without condoms among high school males.

H_a4: There is an association between participation in sports and sex without condoms among high school males.

I crafted the research questions with the use of the ecological model and observed patterns of society. The dependent variable was the teen's sexual activity status as measured by answering *yes* or *no* to ever having sex and how many sexual partners they had had in the last 3 months. The sexual risk behaviors were measured by the teen males' response to drug and alcohol use before intercourse and instances of sex without condoms. The independent variable was the teen's participation in extracurricular activities as measured by their response to the number of sports teams they had participated in over the last 12 months. See Table 1, Table 2, and Table 3, which provide corresponding survey questions, scales of measurement, conceptual definitions, operational definitions for the control, and independent and dependent variables

respectively. Overall, I relied on self- reported data from the 2015 YRBSS and informed observations of teen male behaviors over time in this study.

Theoretical Foundation

I used Bronfenbrenner's (1977) ecological model as the theoretical foundation for this study. The ecological model was developed by psychologist, Urie Bronfenbrenner, in the early 1970s and provides a wide scope of behavioral influential factors from the individual and interpersonal level to the community level (Bronfenbrenner, 1977). Bronfenbrenner's original model started at the individual level, then continued to include the microsystem, mesosystem, exosystem, and macrosystem. Over the years, philosophers have evolved these terms to be consistent with more modern definitions (Rimer, Glanz, & National Cancer Institute, 2005). Today, the cycle starts at the individual level, then moves to the interpersonal, environmental, institutional, and community factors (Rimer et al., 2005).

In today's implication of the ecological model, interpersonal factors include the individual's thoughts and beliefs about a particular subject and how it will have an effect on their behaviors (Rimer et al., 2005). At the individual level, the teen's participation in sports may have an effect on their risky sexual activity level. This may also be affected by family presence and childhood factors, including the family's identified morals, values, and standards. Interpersonal factors from family members and close friends shape behavior through accepted and practiced behaviors (Rimer et al., 2005). The research study variable of race is also shaped by these factors. Additionally, the variable of sports participation is demonstrated at this level. These behaviors include the variables of sexual

activity status and sexual risk behaviors. The environment may influence the teen males' risky sexual activity and sports participation by having venues for hosting of these types of activities and the community members to facilitate them, which is indicative of the community infrastructure. The variable of sports participation is also demonstrated at this level. Moreover, the institutional factors, such as public or private school attendance, may influence an individual's participation in sports and knowledge of sexual risk (i.e., condom use).

At the community level, states and counties may have varying delivery methods of sexual education (e.g., comprehensive sexual education or abstinence-only education), which can also be held at the policy level(Kantor, & Levitz, 2017). These regulations have the ability to limit health education delivery and sexual risk behavior prevention efforts in public schools. The institutional and community factors are also represented by the variables of drug and alcohol use before intercourse and sex without condoms.

I chose the ecological model as the theoretical foundation because there are multiple factors that influence the sexual risk behaviors in teen males, which help to assess the relationship between the two variables of sports participation and risky sexual activity. With this quantitative study, I aimed to build upon the ecological model and provide knowledge as to how the covariates of age, race, and grade level influence high school male athletes' sexual activity status. The ecological model shaped the study by facilitating a focus on multiple variables and covariates and tracing teen sexual risk behavior from the individual and interpersonal level to the community and policy level.

The YRBSS provided data on all of the necessary variables to formulate this holistic approach and the nature of the study.

Nature of the Study

I used a quantitative approach to analyze the secondary data in this study, which aligned with testing the association between high school male sexual risk behaviors and their participation in sports. The dependent variable was the teen's risky sexual activity status as noted by whether they had ever had sex and the number of lifetime and past 3-month span sexual partners. These sexual risk behaviors also took into account the alcohol and drug use before intercourse of the teen males and the instances of sex without condoms.

The independent variable was the teen males' participation in extracurricular activities as measured by their response to the number of sports teams they had participated in over the last 12 months. Data on these variables and the covariates of age, race, and grade level were supplied by the 2015 YRBSS. I analyzed the data using logistic regression and descriptive statistics, which showed whether there was a relationship between sports participation and sexual risk behaviors in high school males. Overall, this study was grounded in theory with informed observations of natural teen behaviors to address the problem of increased STDs in teen males. These methods were further supported by my review of prior qualitative and quantitative research studies on the topic from the past 5 years.

Literature Search Strategy

I conducted a thorough literature review using a variety of sources and databases. These sources included Academic Search Complete and Google Scholar, accessed through the Walden University Library system. My detailed literature search included the use of a strategic set of terms needed to find the most relevant and accurate literature sources for this quantitative study.

I searched these terms individually and as phrases. My search began by researching sources with the key terms associated with the independent and dependent variables, and then later the confounding variables. The independent variable was researched using the phrase *high school + athletes*. The dependent variable was researched using a combination of terminologies such as *high school, abstinence and high school, sex,* and *males*. Moreover, the literature search for an appropriate methodology included terminologies such as *Youth Risk Behavior Surveillance* and *YRBSS*. Other key phrases I used for the literature search included *STD transmission, STDs, male-focused programs, teen fathers, risk behaviors, high school males, teen males, sexual risk, male athletes,* and *sports*.

Aside from the key phrases, the literature was specialized by focusing on a detailed scope of usable works. The scope of the literature review spanned from works published between 2011 and 2018. I selected this time span to stay current with the literature published within the last 7 years. My search only included scholarly literature from peer-reviewed sources to ensure quality works were represented. From the literature search, there was only a small pool of research dedicated to athletes and their sexual

activity level (see Deaner et al., 2012; Taylor & Turek, 2010). To combat this issue with the literature, the dependent and independent variables were examined separately in addition to reviewing the previous works of the methodology as previously mentioned.

Literature Review Related to Key Variables and Concepts

Drug and Alcohol Use

The use of drugs and alcohol before sexual intercourse are risk factors that influence sexual risk behaviors in the teen population (CDC, 2015). With this information in mind, it is important to understand the trends in drug and alcohol use in the study population. From 1999 to 2015, there was a general decrease in teens who used alcohol and drugs before intercourse with the sharpest decrease occurring between 2001 and 2015, from 25.6% to 20.1% (CDC, 2016b). During the 1995 to 2015 timeframe, there was also a decrease in alcohol and drug usage among those who did not use contraception and teens who used birth control pills (CDC, 2016b). A decline from 16.5% to 13.8% in drug and alcohol usage was also evident among those who did not use any method of contraception in 2015, while those who used birth control pills and used drugs and alcohol decreased from 20.8% to 18.2% (CDC, 2016b). The report indicated there has been a significant decrease in alcohol and drug usage from 18.7% in 1991 to 11.5% in 2015 in the teen population (CDC, 2016b). Although this decrease is occurring, there is still work to be done to reduce the negative outcomes of STDs in the U.S. teen population. However, it is important to first understand the social and physical changes that take place during the teen years.

The teen years are a time of explorations, largely in the social facets and physical aspects of body changes. In accordance with the life course perspective, these changes are categorized as biological and environmental (Johnson, Crosnoe, & Elder 2011). The social changes for teenage males include the transition to high school, which is a time for development of educational pursuits and leisure activities (Geisner, Grossbard, Tollison, & Larimer, 2012). During this transition, there are both risk and protective factors that have an impact on sexual exploration in teenagers (Geisner et al., 2012; Johnson et al., 2011). In the following subsection, I will explore some of the protective factors that sports participation encourages.

Sports Participation

Sports participation provides both physical and social benefits to teen males (Renfrow, Caputo, Otto, Farley, & Eveland-Sayers, 2011). There are a large number of teen males who participate in healthy extracurricular activities (e.g., sports, academics, and music) as high school males accounted for 58% of student athletes (Deaner et al., 2012; Geisner et al., 2012). Most widely researched is the benefit of physical fitness, which is known to reduce incidence of diabetes and obesity and promotes healthy life styles into adulthood, beyond just sexual health and wellbeing (Johnson et al., 2014; Renfrow et al., 2011). Previous research has indicated that participation in sports also provides a social benefit by increasing connectedness with the community and positive connectedness with adult authoritative figures (Johnson et al., 2014; Secor-Turner et al., 2017). Understanding the scope of sports participation and the transition to high school is an important foundation for factors surrounding sexual risk behavior in teen males

because it can pinpoint the best time to introduce sexual education, both of which I will further discuss later in this literature review.

The most common methodology provided in the literature was the survey design (Geisner et al., 2012; Zamboanga et al., 2012). There was limited literature that reviewed qualitative methods such as specimen samples to find sexual risk behavior patterns in teen males (Cummings, Auerswald, & Ott, 2014). In the reviewed literature, surveys were mostly distributed through some method of school contact from the sampling pool. The most popular approaches included having the students take the survey online and being compensated for their time with a gift card or other monetary gifts (Geisner et al., 2012; Zamboanga et al., 2012). Research in this field has also found many commonalities in the data collection methods.

In summary, researchers in adolescent sexual health have approached the concept of sexual risk behaviors among high school students in a variety of ways. However, there are strengths and limitations to the adolescent health research process. Strengths in the adolescent health research practices include identifying factors that encompass all of the risk behaviors that teens may encounter (Geisner et al., 2012; Johnson et al., 2014). Additionally, the methodologies used to research these factors have been consistent in formatting (e.g., use of questionnaires and sampling questions from previous year's YRBSS surveys; Hyun, Reily-Chammat, & Washburn, 2011; Kaplan, Jones, Olson, & Yunzal-Butler, 2013; Useche, Medina, Ross, & Markham ,2014; Moss, Liu, & Zhu, 2017). With these sources in mind, it is also important to note the limitations associated with them.

The first limitation I found was that there is little research on the direct association between athletic status and sexual risk behaviors and their associated sexual outcomes in teens. Additionally, Geisner et al. (2012) researched how the health of high school athletes are protected through engagement in sports activities, but high school athletes are still at risk in other areas (i.e., drugs and alcohol) that remain under researched. I will further explore these risk and protective factors in forthcoming subsections of the literature review. The major themes in the literature I will cover include sexual risk behaviors, abstinence and sexual activity, abstinence transition and life after abstinence, cultural appropriateness, and high school sports participation factors.

High School Sexual Risk Behaviors and Abstinence

Sexual Risk Behaviors

Researchers of adolescent sexual health have approached the problem of high STD rates in teens by examining current trends in the sexual health of high school students and an extended view of sexual risk behavior into adulthood. A variety of these studies have used the early sexual activity variable as a predictor of future sexual health outcomes, such as pregnancy and STD transmission (Hyun et al., 2011; Kaplan et al., 2013). Hyun et al. (2011) used the 2009 Rhode Island YRBSS to analyze the survey responses from 3,214 high school students. These authors used chi-square analysis of the data and found that many of the Rhode Island high school students were partaking in sexual activity at an early age, before age 13, and using little contraceptives to protect from STDs and pregnancy. The study found that 54% of the respondents reported using condoms at last sexual intercourse (Hyun et al., 2011). Dariotis et al. (2011) used three

waves of the National Survey of Adolescent Males (1988, 1991, and 1995) to discover the outcomes of high-risk sexual behaviors among 1,880 African American, Caucasian, and Latino men, with age ranges of 15–19, 17–22, and 21–26. In contrast, Kaplan et al. (2013) researched the association between early sexual initiation and future risk behaviors but took the view of high school students. Bivariate and multiple logistic regression were used to test the association between sexual risk and violence outcomes and early sexual encounters, defined by those who had sexual intercourse before the age of 14 (Kaplan et al., 2013). The researchers found that 16% of New York City high school students that engaged in high-risk sexual behaviors and were exposed to violence at an early age, as defined by having ever been intentionally hit or slapped by a dating partner. However, both studies found that those who participated in sex at an early age were more likely to engage in sexual risk behaviors later in life (Dariotis et. al., 2011; Kaplan et al., 2013). Kaplan et al. also concluded that sexual risk intervention and prevention programs should be introduced at the middle school level to further delay the initiation of sexual encounters in teens. The strengths associated with their approaches include having a longitudinal view of the outcomes associated with early sexual engagement.

Additionally, researchers have agreed that the definition of early sexual activity included teens that have had sex before the age of 13 or 14 (Hyun et al., 2011; Kaplan et al., 2013). The limitations inherent in their approaches included the limited availability of the longitudinal data that spans into adulthood, which is to be expected due to the expensive nature of these types of studies. The independent variable and covariates were

confirmed for use in this study because previous studies have included condom use, number of sexual partners, and age at first sexual discovery (Hyun et al., 2011; Kaplan et al., 2013). The covariate of race was justified by the literature reviewed because researchers provided a clear distinction as to how race further defined sexual risks (Brito, Davis, & Chakrabarti, 2014; Dariotis et. al., 2011). Dariotis et. al. (2011) used three waves of the National Survey of Adolescent Males (1988, 1991, and 1995) to discover the outcomes of high-risk sexual behaviors among 1,880 African American, Caucasian, and Latino men. The waves' age ranges were 15–19, 17–22, and 21–26. The researchers used multinomial and logistic regression to analyze the sexual risk behavior outcomes in the participants and found that young African American men had the highest rates of sexual risk and STDs in the group, while African American and Latino men were more likely to continue to engage in high-risk sexual behaviors into and through adulthood. Furthermore, African American men were found to be more likely to have a history of STDs as compared to their research counterparts (Dariotis et al., 2011). Dave et al. (2017) and Coakley, Randolph, Shears, & Collins (2017) noticed the need for African American parents to communicate with their children to reduce sexual risk behaviors. Dave et al. (2017) evaluated the Teach One Reach One community initiative to reduce risky sexual behaviors in young African American males in North Carolina, by improving the conversation with their parents. Pre intervention and post intervention measures were taken to assess the improvement of the conversations over time. The results from Dave et al. (2017) concluded that the conversations between the child and adult improved due to the program. Coakley et al. (2017) specifically recruited African American fathers and

provided focus to understand how conversations with their sons made an impact on their sexual behaviors. The common themes expressed in the focus groups included the father's values on (a) sex, (b) sexuality, (c) relationships, and (d) marriage (Coakley et al., 2017). Researching sexual risk behaviors in teen males requires a systematic exploration of the frequency and types of contraceptives used, the rates of STDs in this population, and reasons for early sexual discovery. Areas in need of further research include how other influences (i.e., parents and community) contribute to teens' long-term consequences of sexual risk behaviors (e.g., transmission of STDs and pregnancy) as they transition into adulthood.

Abstinence and Sexual Activity

Researchers in the adolescent sexual health area have approached the problem of high STD rates in teens by targeting high school students, mostly freshman, to understand their attitudes on sexual abstinence (Smith, Smith, McNeill, & Wilson; 2013, Wilson, Smith, & Menn, 2013). Other common themes I found in the literature included data pertaining to abstinence as it relates to three key areas: (a) thoughts about sex in general, (b) the abstinence lifestyle, and (c) life after abstinence. Research in each of these key areas will provide the needed information for future interventions to improve this population.

The first phase in understanding how abstinence is beneficial in reducing STDs and pregnancy in teens is to have knowledge of the attitudes and behaviors of the adolescents as it relates to the term of sexual activity and abstinence. Brito et al. (2014) surveyed 364 U.S. Latino and Dominican Republic high school students via

questionnaire to inquire about their knowledge of Sexually Transmitted Infections (STIs) and STDs. Forty percent of the students reported being sexually active, including partaking in oral sex, anal sex, or vaginal intercourse (Brito et al., 2014). Also, awareness among students in the United States was higher pertaining to the benefits of practicing abstinence compared to students in the Dominican Republic and teen males were more likely to participate in high-risk behaviors as compared to teen females (Brito et al., 2014). The researchers also found that teen females were more knowledgeable of STDs compared to their male counterparts.

Brito et al. (2014) used a mixed population of students with some being sexually active, while other researchers, including Smith et al. (2013) and Wilson, Smith, and Menn (2013), chose to examine those students who were less likely to be sexually active. Smith et al. surveyed 262 high school freshman students who had not had sexual intercourse and used multinomial logistic regression to discover their views and associations with acceptance of premarital sex. Almost 49% of the participants agreed or strongly agreed that people should only have sex if they are married (Smith et al., 2013). The researchers also found that those students who were female, content with their sexual activity status, and got parental backing, were less likely to be accepting of premarital sex. Wilson et al. investigated the implications associated with abstinence by providing a questionnaire to 216 Minnesota high school freshmen boys and girls. Their survey questions were segmented with positively and negatively associated words, and the students were to rate them using a Likert scale format. The researchers used Pearson chi-square tests and Wilcoxon sign-rank tests to assess sex-based differences, definitions, and

levels of concordance, and found that the males were more likely to associate negative connotations with abstinence, had fewer friends who took abstinence pledges, and received less fostering of abstinence. Additionally, the researchers found positive word association with abstinence with the following words: "safe'' (84.1%), ''beneficial'' (66.5%), ''good'' (60.5%), ''wise'' (69.3%), and ''right'' (54.4%).

One of the strengths associated with the researchers' approaches included the use the freshman population because they are more likely to have a fresher perspective of abstinence factors due to their younger age when compared to high school seniors who are much older. The limitations inherent in their approaches included not having multiple comparison groups to provide a more holistic view of how teens feel about abstinence and sexual risk behaviors. My use of the independent variable of ever had sex and covariates of age and grade are warranted from the literature discussed in this subsection because the researchers mainly focused on freshman students, indicating that there is a change in the ideology of abstinence as they progress in grade level and as they increase in age. The aspect that remains to be studied includes the opinions of the upper classmen and comparing their results with the freshman students' attitudes about sexual abstinence.

Abstinence Transition and Life After Abstinence

Researchers of adolescent sexual health have approached the problem of high STD rates in teens by surveying students who have not yet taken part in sexual activity for a better understanding of their future intentions (Cummings et al., 2014; Useche et al., 2014). The strengths associated with their approaches included exploring the optimal time to introduce abstinence and comprehensive sexual education programs. Ott, Ghani,

McKenzie, Rosenberger, and Bell (2012) used qualitative methods by, recording narrative sessions of 14 teen males aged fourteen to nineteen, mostly African America, providing the details of their first sexual encounters. The researchers found that there were three phases that were concurrent with a vast majority of the participants including preparation for the sexual event, the sexual event, and events that occurred after the sexual event. In another study, those participants, who reported lower conventional societal values and more religious or moral aspirations to remain abstinent were more likely to intend to delay sex (Cummings et al., 2014). Once content with ending the abstinence phase of their lives, teens will seek exploration of their sexuality and eventually engage in sexual activity (Cummings et al., 2014).

Cultural Appropriateness

The teen years are an enriching period of exploration and investigation for researchers and program planners seeking to increase the awareness among this population and avoid adverse outcomes such as STD transmissions. With this information in mind, it is important to understand how these factors are associated across various cultural bounds. Useche, Medina, Ross, and Markham, (2014) analyzed 21 semi structured interviews with Latino adolescents in the United States regarding their sexual orientation. Seven of the students had sexually debuted and acknowledged sexual feelings of desire, curiosity, and pleasure from their romantic partner as reasons to explore their physical sexuality. The remaining 14 participants did not reveal, crediting self-interest and external prohibitive factors as their reasoning for remaining abstinent.

Ott et al. (2012) took a similar approach by, recording narrative sessions of African American teen males providing the details of their first sexual encounters. Another strength in research design is exploring the various cultural and social economic factors that play a part in teen male sexual encounters, which prove a basis for culturally appropriate prevention and intervention programs. Useche et al., (2014) took note of the high rates of early sexual initiation in this population and concluded that the Latino population could benefit from culturally appropriate sexual risk prevention programs.

The limitations inherent in the researcher's approaches include not having a broad range of comparison groups to generalize the research findings. The independent variable of ever had sex, is supported in the literature, as the researchers above used abstinent teens as research study participants. This provides future justification to ensure future male focused safe sex programs are fostered and remains a key aspect to be studied in the adolescent sexual health arena. Understanding how certain factors can be mediated to allow for a longer period for their sexual debut is another area to be further researched.

High School Sports Participation Factors

There are both benefits and risks associated with athletic participation in high school students. Researchers of adolescent sexual health have approached the problem of high STD rates by exploring how athleticism impacts risk behaviors in high school males. The strengths associated with their strategies included solely focusing on high school athletes and gathering insights from a variety of student-athletes (Geisner et al.,2012; Johnson et al., 2014; Zamboanga et al., 2012). Zamboanga et al. (2012) used alcohol expectancy theory to examine the factors related to high school athlete's reasons for

consuming or not consuming alcohol by surveying 219 in-season athletes to determine the reasons for their alcohol consumption. Though structural equation modeling , the researchers found that male athletes were more likely to abstain from risky drinking behaviors in order to keep their athletic performance on par when compared to non athletes (Zamboanga et al., 2012). Geisner et al.,(2012) surveyed 635 high school seniors to identify the differences in risk factors as it relates to their participation in sports, which provided a similar conclusion that high school athletes were more likely to take part in risky behaviors such as gambling and drinking, but did exercise more than their counterparts. Johnson et al. (2014) took a similar approach by surveying 102 alternative high school students to discover the relationship between connectedness with adults and peers, and participation in sports and risk behaviors such as sexual exploration and substance abuse. The researchers found that there was a strong positive connection between the athletes' protective factors and their relationship with school connections and adults. The methods for obtaining this information included using edited questions from the 2009 YRBSS and adding often to never as Likert scale answers to the participation in sports activities in the last twelve months in question. These studies are important as they provide background knowledge when answering the research question about drug and alcohol use before intercourse among high school males. It is additionally important to explore how other risky behaviors may influence teen male athletes. Additionally, the studies included questions from previous YRBSS surveys, including asking the participants if they had participated in a sports team in the last twelve months (Geisner et al., 2012; Johnson et al., 2014). The limitations inherent in their approaches

include not specifying the risky behaviors and measuring them independently of each other.

Moreover, there was little discussion of how athletes' risky behaviors compare with non athletes (Geisner et al., 2012). The dependent variable of sports participation is justified from the literature as the studies use the students' sports participation as a foundation for the research (Geisner et al., 2012; Zamboanga et al., 2012). The controversial circumstances include challenging current literature, as there have been mixed reviews of how sports play as risk and protective factors (Geisner et al., 2012). It is possible that those who are participating in sports programs are more likely to be preoccupied and are not participating in sexual risk behaviors. On the other hand, it may be possible that those who participate in sports are targeted for sexual risk behavior due to their perceived popularity. There is much reach about these situations at the college and professional sports teams area, but the key factor is the monetary status that comes along with the participation. Additionally, there may be no association due to the fact that there are no monetary benefits at the high school level. Moreover, it is important for future studies to compare research with different states and cities to understand how the sexual risk factors differ across geographical and cultural boundaries.

Definitions

For the purpose of this study, it is important to ensure that key terms are clearly defined. The YRBSS report supports the following definitions for the purposes of this research. A thorough review of the YRBSS codebook and question rationale also comply with these definitions.

3 month number of sexual partners: The numerical value of partners of which the respondent has had sexual relations with in the last 3 months.

Abstinence status: Having never partaken in vaginal sexual intercourse at any point in one's life.

Age: The number of years since the participant's birth.

Age at first sexual intercourse: The age at which the participant engaged in sexual intercourse for the first time.

Condom use: The use of condoms during sexual intercourse.

Number of sexual partners: The number of partners the participant has engaged in sexual activity with over their life time.

Grade level: The participant's high school classification level (9th, 10th, 11th, or 12th grade).

High school males, teen males, and adolescent males: Those males who are in the 9th, 10th, 11th, or 12th grade either in public or private school, independent of age.

Influence at last sexual intercourse: The use of non prescription drugs or alcohol at the time of last sexual intercourse.

Race: The participant's racial identity as a singular or combination of the following races American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, or White.

Sports participation: Engagement of students in physical extracurricular activities (i.e., club or team activities). This definition is distinguished from just any activity that

raises the heart rate. Those students who take part in those activities are identified as athletes.

Assumptions

Conducting this research also includeed some assumptions about the population and the study. First, it is assumed that the participants completed the surveys in an accurate and truthful manner. According to the YRBSS, the students were informed of the anonymous nature of the study, which ensured that their answers would not be shared with teachers or parents (Kann et al., 2016). The assumption of truthful results is critical to the outcome and results of the study. With the understanding that the participants answered completely and truthfully, the results of the study were valid. Additionally, it is assumed that the data will have been collected from a representative sample of the population, as the stud actively sought to include the African American and Hispanic population, among other selection factors. These assumptions are bound by the scope of this quantitative study.

Scope and Delimitations

The particular focus of teen males was chosen because research has found that males are often the initiators of sexual encounters, although a vast majority of teenage sexual health initiatives are created with teenage females in mind, which females often report the claim above (Gruchow & Brown, 2011; Shade, Kools, Pinderhughes, & Weiss, 2012). There was little recent and relevant information in regards to programs, which focus on teen males and reducing sexual risk behaviors independent of female-focused initiatives (Deaner et al., 2012). However, there is promise for future expectations, with

research proposals such as these. This study was bounded by a variety of factors such as study population and theory constructs. First teen females in high school were excluded in the study in order to focus on the teen male population. The focus of the study was teen males who participated in the 2015 YRBSS study. Their sexual risk were examined based on their sports activity, and their particular sexual risk and level of sports involvement were reviewed to enhance understanding of the study population.

I used the generalizability theory when exploring the ecological model as a theoretical framework, as it includes a social component of community factors. The health belief model and transtheoretical models were examined because of their ability to provide a longitudinal view of behavior change, but were not used because they did not allow for segmentation and individualization of the person's changes over time (Diclemente & Prochaska, 1982; Hochbaum, Rosenstock, & Kegels, 1952). However, the ecological model provided the fundamental construct and the social aspect of behavior change needed to further the study, therefore it was selected as the theory upon which to base the study.

The YRBSS takes into consideration the factors surrounding the accessibility of the quantitative data (Kann et al., 2016). This includes referencing a representative sample of individuals for the survey construct. Secondly, the YRBSS has adapted to the ever-changing adolescent population by asking age appropriate and holistic health risk questions. With these notions in mind, that this study and its results are applicable to the high school population within the United States, furthering the public health discipline.

This study could advance the knowledge of the public health discipline in a variety of ways. First, this study could bring to light if there is an association between athletes and sexual risk behaviors. The sexual risk behaviors are quantified by their age at fist sexual intercourse, number of sexual partners, drug and alcohol use before intercourse, and instances of sex without condoms (Hyun et al., 2011; Kaplan et al., 2013). This quantitative study has the ability to be beneficial on a larger scale.

This study can also contribute to policy and practice factors as it relates to reducing the transmission of STDs and pregnancy in the teen population. An example includes having regulations in place to enforce implementation of comprehensive sexual education programs, which includes information on STD and pregnancy prevention methods (i.e., condom use). Another example includes mandating that medical professionals inform teens of the importance of obtaining their STD status at medical appointments and at clinics. In practice, there is the implication for this study to create new programs that address risk factors associated with the spread of STDs in this population. This can be accomplished by holding school-based programs that promote healthy activity and provide ways to combat risky sexual activity such as drug and alcohol use before intercourse and sex without condoms. Although these factors were not tested in this particular study, this study also aims to improve the understanding of how sports programs benefit individuals, families, and communities by reducing sexual risk behaviors in teen males. Sexual risk behavior prevention programs for high school males have the potential to bring about social change to this demographic in a variety of ways. One proposition includes shifting the focus from preventing STDs at the individual level

to incorporating these prevention efforts throughout a community. The social change can also concentrate on reaching the high school population at every phase of the sexual process, abstinence, abstinence transition, and post sexual debut in order to prevent and deter them from taking part in risky sexual risk behaviors at earlier ages.

Significance, Summary, and Conclusions

The major themes in the literature include sexual risk behaviors, abstinence and sexual activity, abstinence transition and life after abstinence, cultural appropriateness, and high school sports participation factors. The research on high school athletes shows that there are some risk and protective factors that sports participation provides, including injury and reaching a state of physical fitness (McCauley, 2013; Zamboanga et al. 2013). Additionally, the research shows that high school students also take part in risky behaviors such as drinking, substance abuse, and sexual risk (Geisner et al., 2012; McCauley, 2013). These themes have the potential to serve as key elements to focus future teen sexual health programs.

Furthermore, there are fundamental aspects of the topics of sexual activity and sports participation that need further consideration (Ott et al., 2012; Useche et al., 2014; Zamboanga et al., 2012). The literature review reveals key elements that are concurrent with the quantitative study. The known details include the rate of sexual encounters among high school adolescents, with a reported 56% of high school students being sexual active, and the outcomes of the early sexual activity, such as prolonged sexual risk behaviors (Dariotis et al., 2011; Hyun et al., 2011; Kaplan et al., 2013; Salerno, Darling-Fisher, Hawkins, & Fraker, 2013). There is, however, limited information about

contributing factors related to the increase in rates of sexual activity and the decline of abstinence among high school males (Dariotis et al., 2011; McCauley, 2013). This leaves a significant gap in the literature as it relates to reducing sexual risk and innovative intervention strategies for the teen male population.

The quantitative study aims to fill the gap in understanding the association between teen males' sexual risk behaviors and sports participation. The inquiry of these relationships has been ignored by preceding studies. Much of the risk behavior analysis categorizes all risk behaviors together, with no regard to the discovery of how sexual risk factors independently relate to sports participation (McCauley, 2013; Zamboanga et al., 2013). This study builds upon the strengths of previous research while avoiding limitations such as small sample size (Ott et al., 2012; Useche et al., 2014; Zamboanga et al., 2012). The methodology in this study includes a secondary quantitative analysis of the 2015 YRBSS survey. The 2015 YRBSS survey contains questions directly related teen males' sports participation, sexual activity status, and sexual risk behaviors. The research design and data collection section explains the relevance of this methodology and its use in the quantitative study.

Section 2: Research Design and Data Collection

Introduction

My review of previous research has provided a background and introduction to the topic of sports participation and sexual risk behaviors among high school males. In this quantitative study, I aimed to explore the association between sports participation and sexual risk behaviors among high school males. The covariates of age, race, and grade level were also included to further this study. The primary components of this section includes the research and design rationale, methodology and sampling techniques, threats to validity, and ethical procedures.

Research Design and Rationale

The independent variable was the sports participation of teen males, as measured by their response to the number of sports teams they had participated in over the last 12 months. The dependent variables were sexual activity status, drug and alcohol use before intercourse, sexual engagement with multiple partners, and sex without condoms. I included the covariates of age, grade, and race to provide a foundation for the interpretation of the results. The level and richness of the 2015 YRBSS survey data coupled with the current gap in the literature provided favorable alignment to conducting an innovative secondary quantitative study. Using the 2015 YRBSS data was an important step in building a foundation for this study of the association between sexual activity and sports participation in subsequent years of YRBSS. The quantitative study design ensured the proper measurement of the association between the independent and dependent variables, in addition to the covariates. Various research methods have been

used to assess these selected variables (see McCauley, 2013; Zamboanga et al., 2013), including one study that used primary survey and specimen samples (Salerno et al., 2013). I took into account the methodologies used in prior studies in this area of research by conducting a detailed literature review (see Section 1).

Methodology

Population

The target population for this study was high school males, particularly those that identified as athletes. I had to sort through many layers of the YRBSS survey sampling data in order to reach this particular group. The first layer of sampling included 1,276 participating units or schools. The second layer of sampling included incorporating a heavily Hispanic and African American population, yielding 180 schools with Grades 9 through 12 and 125 final school respondents. According to the YRBSS 2015, this technique was used so that the weighted count of students was equal to the total sample size, and oversampling was used to correct for bias in the original data set. After the final layer of sampling, those in a required class, such as English, took the survey and 15,624 students completed cleaned and usable questionnaires from which there was a sample of 7,749 high school males.

Sampling Strategies

The sample utilized input from 47 states that had submitted their results to the CDC (Kann et al., 2016). I chose this sample because of its ability to be representative of the U.S. teen population. Additionally, this sample was the closest example to the actual population of high school aged males in the United States (Kann et al., 2016). Aside from

the sampling strategies, it is also important to note the method of sampling to ensure proper results interpretation.

Sample Drawing

I drew the sample for this study from the 2015 YRBSS male participants. The survey stratified the population by only including those males who were in high school, as defined by the ninth through 12th grade (Kann et al., 2016). The YRBSS used a multistep sampling frame to ensure the results of the national survey (Kann et al., 2016). The frame included ninth through 12th grade students attending a public or private school in the 47 states (Kann et al., 2016).

I used a three-stage cluster design process to provide a representative sample of the nation's public and private high school population. The first sampling frame was measured from the counties, whether small, large, or grouped, the counties' metropolitan count, and the percentage of African-American and Hispanic residents. Stage 2 of the sampling process consisted of a probability sample utilizing school enrollment numbers. Random sampling completed the third and final stage, in which students were selected based on a required course or period, such as an English class. The students were given the option to participate in the survey and if they declined their slot was not replaced (Kann et al., 2016). From the sampling type, it is also beneficial to know how the sample was drawn in order to represent the target population.

I downloaded the 2015 YRBSS data set from the CDC's YRBSS website. The data set was provided at no charge for scholarly purposes because the data set is collected

with government funding (Kann et al., 2016). In this quantitative study, I utilized an open database, which was not a part of historical or legal documents..

I used the formula shown in Figure 1 to calculate the sample size needed to complete the quantitative study (see Kane, 2015), taking into consideration the independent variable of this study, sports participation. As mentioned previously, teen males account for 58% of high school athletes (Geisner et al., 2012). The 58% was measured against the 2012 U.S. Census Bureau's population survey, which yielded 1,084,000 males between the ages of 15 and19. The sample population for this study included 43% of the population as teen male athletes, which was accomplished by having a sample size of 7,749 teen male participants, with at least 3,342 respondents who reported their participating on at least one sports team in the last 12 months (the independent variable of sports participation). An *N* value of 85 provided the needed confirmation of a well-populated sample size for this study, which was less than the 3,342 respondents that were identified as the study population of high school males. The equation parameters included: $p0$ = proportion (incidence) of population (.58), $p1$ = proportion (incidence) of study group (.43), α = probability of Type I error (0.05), β = probability of Type II error (0.2), both of which were chosen due to their popular use in previous quantitative studies and z = critical Z value for a given α or β (1.98). I derived this data analysis standard from Green and Salking's (2014), *Using SPSS for Windows and Macintosh,* (7th ed.) and Kane's (2015) online tools.

$$N = \frac{p_0 q_0 \left\{ z_{1-\alpha/2} + z_{1-\beta} \sqrt{\frac{p_1 q_1}{p_0 q_0}} \right\}^2}{(p_1 - p_0)^2}$$

$$q_0 = 1 - p_0$$

$$q_1 = 1 - p_1$$

$$N = \frac{0.58 * 0.42 \left\{ 1.96 + 0.84 \sqrt{\frac{0.43*0.57}{0.58*0.42}} \right\}^2}{(0.43 - 0.58)^2}$$

$$N = 85$$

Figure 1. Sample size calculation.

Instrumentation and Operationalization of Constructs

The YRBSS is developed by the CDC and published every other year (Kann et al., 2016). The samples I used for this study were published in 2016, based on the data collected in 2015. Kann et al. (2016) reported that the survey encompasses direct questions, which complemented the independent and dependent variables for this quantitative study. This method improves the appropriateness of this tool and aligns to this study (see Kann et al., 2016). The database notes that there are no limitations of the YRBSS for scholarly purposes; therefore, I did not need to obtain permissions from the developer to use it in this study.

The YRBSS has been used for many research projects. The 2009 survey design was used to study sexual risk behaviors in middle school students (Moore, Barr, & Johnson, 2013). Hyun et al. (2011) also used the 2009 YRBSS survey to research what

types of contraceptives were being used to prevent STDs and pregnancy in Rhode Island high school students. Several validity and reliability studies have been conducted with the YRBSS questionnaires (Useche et al., 2014; Hyun et al., 2011). Earlier versions of the survey included test-retest reliability studies, while another study tested the effect of rewording the question regarding the participant's race (CDC, 2016c; Hyun et al., 2011). A previous version tested the effect of rewording the question regarding the participant's race (CDC, 2016c).

My basis for the development of this study included previous literature reviews and professional work with teens experiencing crisis pregnancies and STDs. The reliability of this study was examined by ensuring the statistical tests are run more than once to ensure complementary results. I kept a record in my Statistical Package for the Social Sciences (SPSS) analysis to document the reliability of the results and methods. Because the YRBSS survey has longevity, the predictive validity is high, and there are many years of previous data that can be reviewed to measure and predict outcomes previously captured in the survey (Kann et al., 2016; Useche et al., 2014). Additionally, the construct validity is reliable in that the selected survey questions are representative of the independent and dependent variables in this study. This validity is also justified from my use of the ecological model as a theoretical framework for the study and its corresponding variables, with each variable relating back to each of the ecological model constructs. Interpersonal factors are also in line with the variables of age and grade. In summary, the YRBSS instrument encompassed the questionnaire items needed to answer

the research questions I posed in this study because each question encompassed the key variables.

Data Analysis Plan

I used the SPSS software, Version 24 to analyze this data. The data were cleaned by a thorough review of the inputs. The data were reviewed for missing items, and the averages were combined to account for the missing data if any remains, because the data source indicated that the YRBSS survey data were received with the data already cleaned (see Kann et al., 2016). I used summary data to test the associations between the independent and dependent variables. With this study, I aimed to answer the following four research questions using statistical inferential tests:

RQ1: Is there an association between sports participation and sexual abstinence among high school males?

$H_0$1: There is no association between participation in sports and sexual abstinence in high school males.

H_a1: There is an association between participation in sports and sexual abstinence in high school males.

Statistical Inferential Test: Logistic regression

RQ2: Is there an association between sports participation and number of sexual partners among high school males?

$H_0$2: There is no association between participation in sports and number of sexual partners in high school males.

H_a2: There is an association between participation in sports and number of sexual partners in high school males.

Statistical Inferential Test: Logistic regression

RQ3: Is there an association between sports participation and drug and alcohol use before intercourse among high school males?

$H_0 3$: There is no association between participation in sports and drug and alcohol use before intercourse in high school males.

$H_a 3$: There is an association between participation in sports and drug and alcohol use before intercourse in high school males.

Statistical Inferential Test: Logistic regression

RQ4: Is there association between sports participation and sex without condoms among high school males?

$H_0 4$: There is no association between participation in sports and sex without condoms in high school males.

$H_a 4$: There is an association between participation in sports and sex without condoms in high school males.

Statistical Inferential Test: Logistic regression

The data analysis plan includes a summary of descriptive statistics for age, race, and grade level. Logistic regression was used as the statistical test to assess the association between the independent and dependent variables. The research from a similar study used logistic regression to provide statistics on the risky behaviors and their

changes over time (Kann et al., 2016). However, this research only encompasses the findings from one timeframe.

The age, race, and grade level data points were used as covariates to provide a foundation for the interpretation of the results. The covariates provide as unique characteristics of the sample size to control for these influences of age, race, and grade level. By selecting these covariates during the study, more knowledge is obtained about which groups should be targeted for future interventions if needed.

For the analysis of the results, an alpha of .05, and a p-value of less than or equal to 0.05 ($p < 0.05$) was used as the statistical significance standard. The confidence intervals were standardized at 95%. The covariates of age, race, and grade level were displayed as total numeric values of the sample population. These covariates were selected because of the need to expand current literature on the optimal age or grade to provide sexual risk behaviors prevention programs, and how these programs should differ in regards to race.

Race is another factor, which has contributed to the social change foundation for this study. The social change produced from this study promotes the shift from having sexual risk interventions focus on individuals, to having the interventions focus on family and community factors that are needed to reduce sexual activity in teen males, such as physical play space and community members and coaches that promote positive sexual health practices.

The objective of this research was to discover the association between sports participation and sexual risk behavior. Therefore, the research questions each represented

a test of association, using logistic regression, between the dependent variable and the independent variables. If there is an association between participation in sports and sexual abstinence, number of sexual partners, drug and alcohol use before intercourse, and / or sex without condoms among high school males, researchers and community members will know that there is benefit in promoting more sports programs as they have an effect on the number of STDs in the given community. A negative association between sports participation and sexual abstinence among high school males may indicate the need to further investigate the foundation of the sports programs. A negative association between sports participation and sexual risk behaviors may indicate the need to further investigate outside factors that influence these sexual risk behaviors. If there are positive associations between the variables, there is a need to further investigate the foundation of the sports programs. However, if there are no associations, there is room to further research factors that lead to reduced sexual risk behaviors in teen males.

Table 1

Control Variables

Variable and Scale of Measurement	Conceptual Definition	Operational Definition
Age – Interval	Q1. How old are you? 1. 12 years old or younger 2. 13 years old 3. 14 years old 4. 15 years old 5. 16 years old 6. 17 years old 18 years old or older	Variable label: How old are you
Grade Level - Interval	Q3. In what grade are you? 1. 9th grade 2. 10th grade 3. 11th grade 4. 12th grade 5. Ungraded or other grade	Variable label: In what grade are you
Race All-Nominal	Q5. What is your race? (Select one or more responses.) 1. American Indian or Alaska Native 2. Asian 3. Black or African American 4. Native Hawaiian or other Pacific Islander 5. White	Variable label: What is your race

Table 2

Independent Variable- Extracurricular Activities

Variable and Scale of Measurement	Conceptual Definition	Operational Definition
Sports Participation- Interval	Q84. During the past 12 months, on how many sports teams did you play? (Count any teams run by your school or community groups.) 0. 0 teams 1. 1 team 2. 2 teams 3. 3 or more teams	Variable label: Sports participation

Table 3
Dependent Variable – Sexual Activity

Variable and Scale of Measurement	Conceptual Definition	Operational Definition
Abstinence Status – Dichotomous	Q60. Have you ever had sexual intercourse? 0. Yes 1. No	Variable label: Ever had sex
3 Month Number of Sexual Partners - Interval	Q63. During the past 3 months, with how many people did you have sexual intercourse? 1. I have never had sexual intercourse 2. I have had sexual intercourse, but not during the past 3 months 3. 1 person 4. 2 people 5. 3 people 6. 4 people 7. 5 people 8. 6 or more people	Variable label: How many sex partners 3 months
Influence at Last Sexual Intercourse- Categorical	Q64. Did you drink alcohol or use drugs before you had sexual intercourse the last time? 1. I have never had sexual intercourse 2. Yes 3. No	Variable label: Did you use alcohol/drugs at last sex

(table continues)

Variable and Scale of Measurement	Conceptual Definition	Operational Definition
Condom Use-Categorical	Q65. The last time you had sexual intercourse, did you or your partner use a condom? 1. I have never had sexual intercourse 2. Yes 3. No	Variable label: Did you use condom at last sex
Age at first sexual intercourse - Interval	Q61. How old were you when you had sexual intercourse for the first time? 1. I have never had sexual intercourse 2. 11 years old or younger 3. 12 years old 4. 13 years 5. 14 years 6. 15 years 7. 16 years 8. 17 years	Variable label: How old at first sex
Number of Sexual Partners-Interval	Q62. During your life, with how many people have you had sexual intercourse? 1. I have never had sexual intercourse 2. 1 person 3. 2 people 4. 3 people 5. 4 people 6. 5 people 7. 6 or more people	Variable label: Number of sexual partners

Threats to Validity

Given the outline of the study, there were some threats to external validity. Although these results may apply to the general U.S. population, the results should be interpreted with caution. This study may not apply to other populations outside of the research area such as other countries. This is due to the demographic, cultural, and political aspects that make each country unique. The threat to validity is mentioned in the study limitations. The internal validity lies with the assumption that the original researchers accounted for selection bias. This factor was threatened by the need to ensure the Hispanic and African American populations were sought after to provide a representative sample of the high school students. This data came already weighted and the threat was applied to the limitations section of the study.

Ethical Procedures

The YRBSS data set was provided without restriction on the CDC's website, therefore no permissions are needed for its use. Although this research employed the use of a secondary data set, the ethical treatment of human participants remained a priority. Only de-identified data with no personal markers were downloaded and reported on to ensure the sample population is protected. Approval from the Walden University institutional review board (IRB), IRB approval number 10-11-17-0525836, was sought and obtained to ensure the ethical considerations of the research were examined. Because this study included child participants, parental consent was sought and obtained before the child's participation in the study.

The participants had the opportunity to refuse to participate in the survey at any time. As a result, those who decided not to take part in the study were not included in the study, and they were not replaced. Additionally, the data was extracted in its de-identified state; therefore, there are no additional measures needed to ensure this aspect is protected. The data will be kept for 5 years on a password-protected computer. Only the primary researcher will have access to the data. The data analysis plan culminates this section of the research study.

Summary

Complex and rigorous research was conducted to answer the four research questions:

RQ1: Is there an association between sports participation and sexual abstinence among high school males?

RQ2: Is there an association between sports participation and number of sexual partners among high school males?

RQ3: Is there an association between sports participation and drug and alcohol use before intercourse among high school males?

RQ4: Is there an association between sports participation and sex without condoms among high school males?

The 2015 YRBSS data were analyzed using the covariates of age, race, and grade level as descriptive statistics, and to provide a foundation for the interpretation of the results. Additionally, logistic regression was completed with the independent and dependent variables of the teen's participation in extracurricular activities as measured by their

response to the number of sports teams they have participated in over the last twelve months. IRB approval by Walden University was obtained before conducting the study to remain compliant with Walden's research practices and academic standards. The methodology and research design provide for sound research and data collection to answer the four research questions, which is provided in the following section.

Section 3: Presentation of the Results and Findings

Introduction

In this quantitative study, I investigated the association between sports participation and sexual risk behaviors, including sex with multiple partners, drug and alcohol use before intercourse, and sex without condoms, among high school males. The four research questions and hypotheses that guided this study were:

RQ1: Is there an association between sports participation and sexual abstinence among high school males?

$H_0$1: There is no association between participation in sports and sexual abstinence among high school males.

H_a1: There is an association between participation in sports and sexual abstinence among high school males.

RQ2: Is there an association between sports participation and number of sexual partners among high school males?

$H_0$2: There is no association between participation in sports and number of sexual partners among high school males.

*Ha*2: There is an association between participation in sports and number of sexual partners among high school males.

RQ3: Is there an association between sports participation and drug and alcohol use before intercourse among high school males?

$H_0$3: There is no association between participation in sports and drug and alcohol use before intercourse among high school males.

H_a3: There is an association between participation in sports and drug and alcohol use before intercourse among high school males.

RQ4: Is there an association between sports participation and sex without condoms among high school males?

$H_0 4$: There is no association between participation in sports and sex without condoms among high school males.

$H_a 4$: There is an association between participation in sports and sex without condoms among high school males.

Section 3 includes a review of the data collection process and the results of the study.

Data Collection of Secondary Data Set

The data for this secondary quantitative study was collected over a two-year time frame. After the 2013 YRBSS results were complete, the study process began again (Kann et al., 2016). In July of 2014, the CDC submitted a request for participation to the qualifying entities for a response, and the participants were given 60 days to respond (Kann et al., 2016). In October of 2015, the schools distributed the survey to the students (Kann et al., 2016)This process all occurred during the same week for each of the schools who participated in the study (Kann et al., 2016). Upon completion of the survey week, there was a 75% response rate for the schools contacted and a 90% completion rate for the survey overall (Kann et al., 2016).

There were a few discrepancies between the data collection methods and the actual data collection methods I used to reach the study conclusions. The first discrepancy included recoding the race-ethnicity variable to exclude spaces, which

misrepresented the data. The second included further defining the type of regression analysis used in the study to include, binary logistic regression, linear regression, and multimodal regression analysis. Additionally, I recoded variables as missing instead of given averages in order to get an accurate estimate of the population. The sample at the lowest level was still over 85, which was calculated to be the sample size needed to have a representative study. Moreover, different versions of the study variables were used to ensure quality outputs. This included Question Number (QN) 64: Percentage of students who drank alcohol or used drugs before last sexual intercourse (among students who were currently sexually active) opposed to Q64: Did you drink alcohol or use drugs before you had sexual intercourse the last time?; QN65: Percentage of students who used a condom (during last sexual intercourse among students who were currently sexually active) opposed to Q65: The last time you had sexual intercourse, did you or your partner use a condom?; and QN84: Percentage of students who played on at least one sports team (run by their school or community groups during the 12 months before the survey) opposed to Q84: During the past 12 months, on how many sports teams did you play on? Aside from these minor discrepancies, I used the analysis plan to formulate the following results.

The baseline descriptive and demographic characteristics of the sample of high school males are represented in Table 5. Eleventh grade was the most represented with 1,979 participants. The students who selected White as their race were overwhelmingly represented with 4,251 participants. The sample was nearly split evenly with 3,734 participants indicating that they had never had sexual intercourse. However, 1,464

participants indicated that they had sex with at least one person in the last 3 months, and 133 indicated that they had sex with six or more people over the previous 3 months. In the case of lifetime sexual partners, 1,075 participants indicated that they had sex with at least one person, and 580 indicated that they had sex with six or more people. Additionally, of those students who were sexually active, 695 reported alcohol or drug use at last sexual intercourse and 1,080 did not use condoms at their last sexual intercourse. Finally, 3,806 of the participants played on one team, and 2,667 played on two teams in the 12 months prior to the survey.

The post hoc power analysis indicated 100% power demonstrating that the sample was adequate. The parameters included $p0$ = proportion (incidence) of population (.58), $p1$ = proportion (incidence) of study group (.43), α = probability of Type I error (0.05), β = probability of Type II error (0.2), both of which I chose due to their popular use in previous quantitative studies and z = critical Z value for a given α or β (1.98). This data analysis standard was derived from Green and Salking's (2014), *Using SPSS for Windows and Macintosh,* (7th ed.) and Kane's (2015) online tools. In the next subsection, I provide an overview of the trends I observed in the cross-tabulations of the independent and dependent variables and covariates.

Table 4

Baseline Descriptive and Demographic Characteristics of the Sample

Age		Frequency	Percentage
12 or younger		21	.3%
13		8	.1%
14		771	10.0%
15		1879	24.3%
16		2005	25.9%
17		1899	24.5%
18 or older		1154	14.9%
	Total	7737	100%
Grade		**Frequency**	**Percentage**
9		1963	25.5%
10		1964	25.5%
11		1979	25.7%
12		1788	23.2%
Ungraded		19	.2%
	Total	7713	100%
Race		**Frequency**	**Percentage**
White		4251	65.4%
American Indian/Alaskan Native		262	4.0%
Asian		380	5.8%
Black or African American		993	15.3%
Native Hawaiian or Other Pacific Islander		150	2.3%
Mix Race		462	7.1%
	Total	6498	100%
Ever Had Sexual Intercourse		**Frequency**	**Percentage**
Yes		3106	45.4%
No		3734	54.6%
	Total	6840	100%

(table continues)

Sexual Partners in the Last 3 Months	Frequency	Percentage
Never had sex	3722	54.8%
None during past 3 months	917	13.5%
1 person	1464	21.6%
2 people	330	4.9%
3 people	138	2.0%
4 people	56	.8%
5 people	28	.4%
6 or more people	133	2.0%
Total	6788	100%

Lifetime Sexual Partners	Frequency	Percentage
Never had sex	3720	54.8%
None during past 3 months	917	13.55
1 person	1075	21.65
2 people	597	4.9%
3 people	396	2%
4 people	251	0.8%
5 people	161	0.4%
6 or more people	580	2%
Total	7697	100%

Alcohol and Drug Use at Last Sexual Intercourse	Frequency	Percentage
Never Had Sex	3,609	54.7%
Yes	694	10.5%
No	2298	34.8%
Total	6,601	100%

Condom Use at Last Sexual Intercourse	Frequency	Percentage
Never had sex	3709	55.2%
Yes	1930	28.7%
No	1080	16.1%
Total	6719	100%

Sports Participation	Frequency	Percentage
1 team	3806	58.8%
2 teams	2667	41.2%
Total	6473	100%

The sample I used for this study was representative of the population as a few of the trends from the literature were evident in the research findings as well. The YRBSS researchers actively sought to include the African American and Hispanic population, among other selection factors, and that proved to be beneficial (Kann et al., 2016). Researchers found that young African American men had the highest rates of sexual risk and STDs in the group, while African American and Latino men were more likely to continue to engage in high-risk sexual behaviors into and through adulthood (Brito et al., 2014; Dariotis et. al., 2011). The results of this study showed that about 60% of African American students participated in sexual activity compared to 52% of mixed race students, 43% of White students, and 30% of Asian students, as noted in Table 6.

The results of this study also showed that an increase in grade and age also led to an increase in the number of sexual partners. This trend was also noted in the literature as researchers often referenced the freshman population as a baseline for the changes in sexual practice (Cummings et al., 2014; Useche et al., 2014). Finally, the sample at the lowest level was still over 85, which was calculated to be the sample size needed to have a representative study.

I included the covariates of age, race, and grade level in this study because of the distinguishing factors they brought to the table. Previous research has shown that sexual activity increases with age and grade (Cummings et al., 2014; Useche et al., 2014). Additionally, research has shown that some races experience greater sexual activity compared to others (Dariotis et. al., 2011). When it came to measuring the association of sports participation and sexual abstinence, there was a significant association; however,

when age, race, and grade were included the results showed an even stronger association (see Table 5; Brito et al., 2014; Dariotis et al., 2011).

I found that students are more sexually active as they get older and when taking into account age, race, and grade as covariates, for every unit increase in age, there is a 30% decrease in the odds ratio of being sexually active. Additionally, when taking into account age, race, and grade as covariates, for every unit increase in grade, there is a 15% decrease in the odds ratio of being sexually active. This trend was also noted in the literature review as researchers often referenced the freshman population as a baseline for the changes in sexual practice (Cummings et al., 2014; Useche et al., 2014). It is important to note the same outcomes are noticed in age and grade because they are measures of time.

Results

From the cross-tabulations of the variables, I identified a few trends. The results showed that as age increases, high school males are more likely to partake in sexual activity at least once in their lifetime, as noted in Table 5. Additionally, about 60% of African American students participated in sexual activity compared to 52% of mixed race students, 43% of White students, and 30% of Asian students, as noted in Table 6. Tables 6 and 7 indicate that the older high school males tend to take on multiple sports. Table 9 demonstrates that 25.8% of White students and 5% of African American students played on two sports teams. Additionally, White and African American students made up the most substantial number of student-athletes with 64.4 % and 14.7% participants,

respectively, compared to only 1% of Native Hawaiian or Other Pacific Islander students as identified in Table 9.

Table 5

Descriptive Statistics of High School Males Who Have Had Sexual Intercourse by Age Cross Tabulation

		Age							
		12 years old or younger	13 years old	14 years old	15 years old	16 years old	17 years old	18 years old or older	Total
Had Sexual	No	1	4	533	1141	976	720	356	3731
Intercourse	Yes	8	0	145	520	783	986	659	3101
Total		9	4	678	1661	1759	1706	1015	6832
Had Sexual	No	0.0%	0.1%	7.8%	16.7%	14.3%	10.5%	5.2%	54.6%
Intercourse	Yes	0.1%	0.0%	2.1%	7.6%	11.5%	14.4%	9.6%	45.4%
Total		0.1%	0.1%	9.9%	24.3%	25.7%	25.0%	14.9%	100.0%

Table 6

Descriptive Statistics High School Males Who Have Had Sexual Intercourse by Race/Ethnicity Cross Tabulation

		Race/Ethnicity						
		White	American Indian/Alaskan Native	Asian	Black or African American	Native Hawaiian or Other Pacific Islander	Mix Race	Total
Had Sexual	No	2221	117	229	311	58	192	3128
Intercourse	Yes	1625	118	101	486	50	215	2595
Total		3846	235	330	797	108	407	5723
Had Sexual	No	38.8%	2.0%	4.0%	5.4%	1.0%	3.4%	54.7%
Intercourse	Yes	28.4%	2.1%	1.8%	8.5%	0.9%	3.8%	45.3%
% of Total		67.2%	4.1%	5.8%	13.9%	1.9%	7.1%	100.0%

Table 7

Descriptive Statistics of High School Males Sports Participation by Age Cross Tabulation

		Age							
		12 years old or younger	13 years old	14 years old	15 years old	16 years old	17 years old	18 years old or older	Total
Sports Participation	1 team	5	3	332	948	995	946	573	3802
	2 teams	7	4	233	562	655	714	487	2662
Total		12	7	565	1510	1650	1660	1060	6464
Sports Participation	1 team	0.1%	0.0%	5.1%	14.7%	15.4%	14.6%	8.9%	58.8%
	2 teams	0.1%	0.1%	3.6%	8.7%	10.1%	11.0%	7.5%	41.2%
% of Total		0.2%	0.1%	8.7%	23.4%	25.5%	25.7%	16.4%	100.0%

Table 8

Descriptive Statistics High School Males Sports Participation by Grade Level Cross Tabulation

		Grade Level					
		9th grade	10th grade	11th grade	12th grade	Ungraded or other grade	Total
Sports Participation	1 team	993	970	973	852	8	3796
	2 teams	599	624	694	732	5	2654
Total		1592	1594	1667	1584	13	6450
Sports Participation	1 team	15.4%	15.0%	15.1%	13.2%	0.1%	58.9%
	2 teams	9.3%	9.7%	10.8%	11.3%	0.1%	41.1%
% of Total		24.7%	24.7%	25.8%	24.6%	0.2%	100.0%

Table 9

Descriptive Statistics High School Males Sports Participation by Race/Ethnicity Cross Tabulation

		Race						
		White	American Indian/Alaskan Native	Asian	Black or African American	Native Hawaiian or Other Pacific Islander	Mix Race	Total
Sports Participation	1 team	2060	124	184	517	67	250	3202
	2 teams	1372	117	172	267	54	144	2126
Total		3432	241	356	784	121	394	5328
Sports Participation	1 team	38.7%	2.3%	3.5%	9.7%	1.3%	4.7%	60.1%
	2 teams	25.8%	2.2%	3.2%	5.0%	1.0%	2.7%	39.9%
% of Total		64.4%	4.5%	6.7%	14.7%	2.3%	7.4%	100.0%

Statistical Assumptions

With every analysis, there are certain assumptions that must be met. The two tests used in the analysis for this study included binary and ordinal logistic regression. In the case of the binary logistic regression, the three assumptions include dichotomous outcome variables, a categorical independent variable, and independence of observations (Laerd Statistics, 2017).

This method was used for research question 1, 3, and 4 which asked if there was an association sports participation and abstinence status, drug and alcohol use, and condom use at last sexual intercourse. Ordinal regression analysis took into account four assumptions: an ordinal measurement of the dependent variable, continuous, ordinal or categorical independent variable, no multicollinearity, and proportional odds (Laerd Statistics, 2017). This analysis was used for research question 2, which asked if there is an association between sports participation and number of sexual partners among high school males. Specific assumption criteria for each analysis are explained in their corresponding paragraphs.

Research Question Analysis

RQ1: Is there an association, between sports participation and sexual abstinence among high school males? H_a1: There is an association between participation in sports and sexual abstinence among high school males.

A logistic regression analysis to investigate if there is a relationship between sports participation and sexual abstinence was conducted. The predictor variable, sports participation, was tested a priori to verify there was no violation of the assumption of the

linearity of the logit. The predictor variable, sexual abstinence, in the logistic regression analysis was found to contribute to the model. The unstandardized Beta weight for the Constant; *B* = (-394), *SE* = 0.88, *Wald* = 20.261, *p* < .001. The unstandardized Beta weight for the predictor variable: *B* = (403), *SE* = 0.60, *Wald* = 45.485, *p* < .001. The estimated odds ratio favored an increase of nearly 50% [*OR* = 1.497, 95% CI (1.331, 1.683)] for sexual abstinence for every one unit increase of sports teams. These results are demonstrated in Table 10.

Table 10

Logistic Regression Analysis Between Sports Participation and Sexual Abstinence

	B	*SE*	Wald	df	*p*	*OR*	95% CI for *OR*	
							Lower	Upper
Played on at least one sports team	.403	.060	45.485	1	.000	1.497	1.331	1.683
Constant	-.394	.088	20.261	1	.000	.674		

A logistic regression analysis to investigate if there is a relationship between sports participation and sexual abstinence was conducted with age, race, and grade as covariates. The predictor variable, sports participation, was tested a priori to verify there was no violation of the assumption of the linearity of the logit. The predictor variable, sexual abstinence, in the logistic regression analysis was found to contribute to the model. The unstandardized Beta weight for the Constant; *B* = (1.971), *SE* = .187, Wald = 110.716, *p* < .001. The unstandardized Beta weight for the predictor variable: *B* = .500, *SE* = 0.64, Wald = 61.456, *p* < .001. The estimated odds ratio favored an increase of nearly 65% [*OR*= 1.649, 95% CI (1.455, 1.869)] for sexual abstinence for every one unit

increase of sports teams when including age, race, and grade as covariates. These results are displayed in Table 11.

Table 11

Logistic Regression Analysis Between Sports Participation and Sexual Abstinence with Covariates

							95% Confidence Interval for *OR*	
	B	S.E.	Wald	df	*p.*	*OR*	Lower	Upper
Played on at least one sports team	.500	.064	61.456	1	.000	1.649	1.455	1.869
Age	-.372	.051	52.527	1	.000	.689	.623	.762
White			132.094	5	.000			
American Indian/Alaskan Native	-.510	.146	12.147	1	.000	.601	.451	.800
Asian	.528	.135	15.337	1	.000	1.696	1.302	2.209
Black or African American	-.851	.092	85.032	1	.000	.427	.356	.512
Native Hawaiian or Other Pacific Islander	-.210	.222	.896	1	.344	.810	.524	1.253
In what grade are you	-.159	.055	8.357	1	.004	.853	.766	.950
Constant	1.971	.187	110.716	1	.000	7.179		

RQ2: Is there an association between sports participation and number of sexual partners among high school males? H_a2: There is an association between participation in sports and number of sexual partners in high school males.

To investigate if there is an association between sports participation and number of sexual partners in the last 3 months among high school males an ordinal regression was conducted. The predictor variables were tested a priori to verify there was no violation of the assumption of no multicollinearity. A full likelihood ratio test was used to verify the assumption of proportional odds. The predictor was sports participation and the outcome was number of sexual partners in the last 3 months. The predictor variable was found to be statistically significant $B = 2.389$, 95% CI (2.279, 2,2500), $p < .001$, indicating that for every one unit increase in sports participation the number of sexual partners decreased by 1unit. The model explained approximately .9% of the variability .009. Therefore, the null hypothesis is rejected and the alternative hypothesis is retained. There is an association between participation in sports and number of sexual partners among high school males. These results are displayed in Table 12 .

Table 12
Ordinal Regression Analysis of High School Males Sports Participation and Three-Month Sexual Partners

	Unstandardized Coefficients		Standardized Coefficients	t	*p*	95.0% Confidence Interval for *B*		Correlations		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
(Constant)	2.389	.057		42.273	.000	2.279	2.500			
Sports Participation	-.277	.038	-.095	-7.298	.000	-.351	-.202	-.095	-.095	-.095

To investigate if there is an association between sports participation and number of sexual partners in the last three months among high school males, an ordinal linear regression was conducted with age and grade as covariates. The predictor variables were tested a priori to verify there was no violation of the assumption of no multicollinearity. A full likelihood ratio test was used to verify the assumption of proportional odds. The predictor was sports participation and the outcome was number of sexual partners in the last 3 months. The predictor variable was found to be statistically significant $B = 1.316$, 95% CI (1.104, 1.527), $p < .001$, indicating that for every one unit increase in sports participation the number of sexual partners decreased by one unit. The model explained approximately 5.5% of the variability .055. Therefore, the null hypothesis is rejected and the alternative hypothesis is retained. There is an association between participation in sports and number of sexual partners among high school males when controlling for the covariates of age and grade. These results are displayed in Table 13.

Table 13

Ordinal Regression Analysis of High School Males Sports Participation and Three-Month Sexual Partners with Covariates

Model	Unstandardized Coefficients		Standardized Coefficients	t	*p*	95.0% Confidence Interval for *B*		Correlations		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
(Constant)	1.316	.108		12.198	.000	1.104	1.527			
Played on at least one sports team	-.309	.037	-.107	-8.339	.000	-.382	-.237	-.095	-.109	-.106
Age	.167	.030	.143	5.592	.000	.109	.226	.207	.073	.071
Grade	.101	.033	.079	3.075	.002	.036	.165	.196	.040	.039

To investigate if there is an association between sports participation and number of lifetime sexual partners among high school males a simple linear regression was conducted. The predictor variables were tested a priori to verify there was no violation of the assumption of no multicollinearity. A full likelihood ratio test was used to verify the assumption of proportional odds. The predictor was sports participation and the outcome was number of sexual lifetime sexual partners. The predictor variable was found to be statistically significant $B = 3.334$, 95% CI (3.118, 3.550), $p < .001$, indicating that for every one unit increase in sports participation the lifetime sexual partners decreased by 1unit. The model explained approximately .1 of the variability .001. Therefore, the null hypothesis is rejected and the alternative hypothesis is retained. There is an association between participation in sports and number of lifetime sexual partners among high school males. These results are displayed in Table 14.

Table 14

Ordinal Regression Analysis of High School Males Sports Participation and Lifetime Sexual Partners

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for *B*		Correlations		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
(Constant)	3.334	.110		30.194	.000	3.118	3.550	3.334	.110	
Sports Participation	-.199	.074	-.033	-2.687	.007	-.343	-.054	-.199	.074	-.033

To investigate if there is an association between sports participation and number of lifetime sexual partners among high school males a simple linear regression was conducted. The predictor variables were tested a priori to verify there was no violation of the assumption of no multicollinearity. A full likelihood ratio test was used to verify the assumption of proportional odds. The predictor was sports participation and the outcome was number of lifetime sexual partners. The predictor variable was found to be statistically significant $B = 1.839$, 95% CI (1.428, 2.250), $p < .001$, indicating that for every one unit increase in sports participation the lifetime sexual partners decreased by 1unit. The model explained approximately 1.7 of the variability .017. Therefore, the null hypothesis is rejected and the alternative hypothesis is retained. There is an association

between participation in sports and number of lifetime sexual partners among high school males when adjusting for age and grade. These results are displayed in Table 15.

Table 15

Ordinal Regression Analysis of High School Males Sports Participation and lifetime Sexual Partners with covariates

	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval *B*		Correlations		
	B	Std. Error	Beta	t	*p*	Lower Bound	Upper Bound	Zero-order	Partial	Part
(Constant)	1.839	.210		8.775	.000	1.428	2.250	1.839	.210	
Sports Participation	-.233	.073	-.039	-3.17	.001	-.377	-.089	-.233	.073	-.039
Age	.295	.058	.124	5.124	.000	.182	.408	.295	.058	.124
Grade	.008	.063	.003	.134	.894	-.116	.133	.008	.063	.003

RQ3:Is there an association, between sports participation and drug and alcohol use before intercourse among high school males? H_o3:There is no association between participation in sports and drug and alcohol use before intercourse in high school males.

A binary logistic regression analysis to investigate if there is a relationship between sports participation and alcohol or drug use at last intercourse was conducted. The predictor variable, sports participation, was tested a priori to verify there was no violation of the assumption of the linearity of the logit. The predictor variable, sports participation, in the logistic regression analysis was found not to be statistically significant ($p > .05$). These results are displayed in Table 16.

Table 16

Binary Regression Analysis Between Sports Participation and Alcohol or Drug Use at Last Intercourse

							95% CI for EXP OR	
	B	*S.E.*	Wald	*df*	*p*	Exp(*B*)	Lower	Upper
Played on at least one sports team	.036	.111	.107	1	.743	1.037	.835	1.288
Constant	-1.485	.165	80.700	1	.000	.227		

A binary logistic regression analysis to investigate if there is a relationship between sports participation and alcohol or drug use at last intercourse was conducted with age, race, and grade as covariates. The predictor variable, sports participation, was tested a priori to verify there was no violation of the assumption of the linearity of the logit. The predictor variable, sports participation, in the logistic regression analysis was found not to be statistically significant ($p > .05$). These results are displayed in Table 17.

Table 17

Binary Logistic Regression Analysis Between Sports Participation and Alcohol or Drug Use at Last Intercourse with Covariates

							95% CI for *OR*	
	B	*S.E.*	*Wald*	*df*	*p*	*OR*	Lower	Upper
Played on at least one sports team	.028	.111	.063	1	.802	1.028	.826	1.280
Age	.014	.089	.025	1	.874	1.014	.853	1.206
Grade	.076	.097	.621	1	.431	1.079	.892	1.306
White			5.592	5	.348			
American Indian/Alaskan Native	-.140	.268	.273	1	.601	.869	.514	1.471
Asian	-.343	.233	2.159	1	.142	.710	.450	1.121
Black or African American	-.146	.162	.814	1	.367	.864	.628	1.187
Native Hawaiian or Other Pacific Islander	.046	.361	.016	1	.899	1.047	.516	2.125
Mixed Race	.266	.196	1.832	1	.176	1.304	.888	1.917
Constant	-1.713	.328	27.324	1	.000	.180		

RQ4: Is there an association, between sports participation and sex without condoms among high school males? H_o4: There is an association between participation in sports and sex without condoms in high school males.

Binary logistic regression analysis to investigate if there is a relationship between sports participation and condom use at last intercourse was conducted. The predictor variable, sports participation, was tested a priori to verify there was no violation of the assumption of the linearity of the logit. The predictor variable, condom use at last intercourse, in the logistic regression analysis was found to contribute to the model. The

unstandardized beta weight for the Constant; *B* = (.968), *SE* = .135, *Wald* = 51.721, *p* < .001. The unstandardized beta weight for the predictor variable: *B* = (-.306), *SE* = .093, *Wald* = 10.693, *p* < .05. The estimated odds ratio favored an increase of nearly 26% [*OR* = .737, 95% CI (.613, .885)] for sexual abstinence for every one unit increase of sports teams. These results are displayed in Table 18.

Table 18
Binary Logistic Regression Analysis Between Sports Participation and Condom Use at Last Intercourse

							95% CI for *OR*	
	B	*S.E.*	Wald	*df*	*p*	*OR*	Lower	Upper
Played on at least one sports team	-.306	.093	10.693	1	.001	.737	.613	.885
Constant	.968	.135	51.721	1	.000	2.634		

A binary logistic regression analysis to investigate if there is a relationship between sports participation and condom use at last intercourse was conducted with age, race, and grade as covariates. The predictor variable, sports participation, was tested a priori to verify there was no violation of the assumption of the linearity of the logit. The predictor variable, condom use at last intercourse, in the logistic regression analysis was found to contribute to the model. The unstandardized beta weight for the constant; *B* = (1.243), *SE* = 0.284, *Wald* = 19.162, *p* < .001. The unstandardized beta weight for the predictor variable: *B* = (-.268), *SE* = 0.094, *Wald* = 8.037, *p* < .05. The estimated odds ratio favored an increase of nearly 23% [*OR* = .765, 95% CI (.636, .921)] for sexual abstinence for every one unit increase of sports teams. These results are displayed in Table 19 .

Table 19

Binary Logistic Regression Analysis Between Sports Participation and Condom Use at Last Intercourse with Covariates

							95% CI for *OR*	
	B	S.E.	Wald	df	*p*	*OR*	Lower	Upper
Age	-.026	.070	.141	1	.707	.974	.849	1.118
Grade	-.068	.075	.830	1	.362	.934	.806	1.082
White			9.397	5	.094			
American Indian/Alaskan Native	-.326	.201	2.633	1	.105	.722	.487	1.070
Asian	-.274	.220	1.548	1	.213	.760	.494	1.171
Black or African American	.237	.124	3.657	1	.056	1.267	.994	1.616
Native Hawaiian or Other Pacific Islander	.191	.344	.308	1	.579	1.210	.617	2.374
Mixed Race	-.002	.165	.000	1	.990	.998	.723	1.378
Constant	1.243	.284	19.162	1	.000	3.465		

Summary

Upon the completion of the statistical analysis, three out of the four research questions found an association between sports participation and risky sexual behaviors. The results indicated an association between participation in sports and sexual abstinence in high school males, an association between participation in sports and number of sexual partners in high school males, and an association between participation in sports and sex without condoms in high school males. However, the results demonstrated no association between participation in sports and drug and alcohol use before intercourse in high school males. The analysis used binary logistic and ordinal regression to determine if an association between sports participation and risky sexual behavior exist.

Given the results of the study, there is a need to further expand this research to impact social change. The following section provides an interpretation of the research

findings. Additionally, recommendations for further research are presented. The section ends with the social change implications that this research can provide.

Section 4: Application to Professional Practice and Implications for Social Change

Introduction

The purpose of this secondary quantitative research study was to explore the relationship between the sports participation status of high school males and their sexual risk behavior status. I used a quantitative approach to analyze the secondary data, which aligned with testing the association between high school male sexual risk behaviors and their participation in sports. The dependent variable was the risky sexual activity status of teens as noted by their responses to ever having sex and the number of sexual partners they had in the past 3-month span and their lifetime. These sexual risk behaviors also took into account the alcohol and drug use before intercourse and instances of sex without condoms of the teen males. The independent variable was the teen males' participation in extracurricular activities as measured by their response to the number of sports teams they had participated in over the last 12 months. These variables and covariates the of age, race, and grade level were supplied by the 2015 YRBSS.

The results uncovered an association between participation in sports and sexual abstinence in high school males, an association between participation in sports and number of sexual partners in high school males, and an association between participation in sports and sex without condoms in high school males. However, the results demonstrated no association between participation in sports and drug and alcohol use before intercourse in high school males. Additionally, as age and grade increase, so did the instance of sexual activity. Moreover, when including race, age, and grade as covariates, the results were strengthened and showed a strong influence on the outcomes.

Interpretation of the Findings

The results of this study support and challenge findings from previous literature related to the dependent and independent variables. The results of this study indicate a positive association between participation in sports and sexual abstinence in high school males. This association indicates that it is beneficial to have teen males participate in sports as it reduces their likelihood of being sexually active. In contrast, Geisner et al. (2012) surveyed 635 high school seniors to identify the differences in risk factors as they related to their participation in sports and concluded that high school athletes were more likely to take part in risky behaviors, such as gambling and drinking, but did exercise more than their counterparts.

I also found a negative association between participation in sports and the number of sexual partners in high school males, which indicated a need to further promote sports activities and make these types of activities more assessable to all in order to reduce risky sexual activity. This finding also leads to the notion that implementing these types of programs will also decrease STD transmission in this group. There were no current studies that spoke to the longevity of the high-risk sexual behaviors of high school athletes over time. However, Dariotis et al. (2011) concluded that African American and Latino men were more likely to continue to engage in high-risk sexual behaviors into and through adulthood. My finding of a negative association between participation in sports and sex without condoms in high school males further encourages the need to further sports programs because they may also reduce pregnancy rates. Hyun et al. (2011) also used the 2009 YRBSS survey data to research what types of contraceptives were being

used to prevent STDs and pregnancy in Rhode Island high school students and found that 54% of the respondents reported using condoms at last sexual intercourse.

The results of this study demonstrated no association between participation in sports and drug and alcohol use before intercourse in high school males. This finding indicates a need to locate other risk factors that may further this type of research. Zamboanga et al. (2012) found that male athletes were more likely to abstain from risky drinking behaviors in order to keep their athletic performance on par when compared to non athletes.

In the case of the covariates, previous research has demonstrated that for every increase in grade and age, there is an increase in sexual activity. The literature also noted a trend in risky sexual behaviors as age and grade increase. Hyun et al. (2011) used the 2009 Rhode Island YRBSS to analyze the survey responses from 3,214 high school students. They used chi-square to analyze the data and found that many of the Rhode Island high school students were partaking in sexual activity at an early age, before age 13, and not often using contraceptives to protect from STDs and pregnancy. Previous studies found that those who participated in sex at an early age were more likely to engage in sexual risk behaviors later in life (Dariotis et. al., 2011; Kaplan et al., 2013). Of participants in this study, those aged 14 and under represented 10.1% of sexually active students.At the high school level, the more the students participated in sports activities, the less likely they were to engage in risky sexual behavior. From the research at the college level, the reverse of this notion is true, in that, if the student participates in sports teams, they are more likely to participate in sexual activity (Olmstead et al., 2015).

With these notions in mind, it is important to introduce healthy sexual behaviors early on in the high school years to prevent the spread of STDs and promote safe sex practices into adulthood. Kaplan et al. (2013) concluded that sexual risk intervention and prevention programs should be introduced at the middle school level to further delay the initiation of sexual encounters in teens. In summary, by using these variables, the results of this quantitative study can promote social change by increasing the current understanding of the role sports programs have in reducing sexual risk behaviors from an ecological perspective.

Given that there is an association between participation in sports and sexual abstinence, number of sexual partners, and sex without condoms among high school males, researchers and community members know that there is a benefit in promoting more sports programs as they affect the number of STDs in the given community. The negative association between sports participation and sexual risk behaviors indicates the need to further investigate outside factors that influence these sexual risk behaviors. Because of the associations between the variables, there is a need to further investigate the foundation of the sports programs such as single player sports compared to multiplayer supports.

Limitations

The key limitations of this study were consistent with issues found in secondary and self-reported data. Self-reported data requires participants to respond to study questions about personal behaviors, attitudes, and experiences, etc. In the case of this study, the selected questions were highly sensitive in nature creating the potential for the

participants to respond in a socially desirable way. There was also the issue of limited understanding, in which the precise definition of sexual intercourse, versus any sexual encounter including oral and anal sex, was not defined in the survey. It is not clear that participants accounted for every partner connected with all types of sexual encounters. As a matter of consistency, the number of those who said they never had sex changed throughout the study questions when given an alternate response choice for describing abstinence. For example, in the question about the number of sexual partners in the last 3 months, there were two options for those who had never had sex: "1) never had sex" and "2) none in the last 3 months." This occurrence only impacted about 14 responses throughout the study.

In the case of covariates, race/ethnicity was a categorical variable that could not be measured with the linear regression analysis. Also, the Hispanic/Latino variable was not a variable that could be measured properly against the independent and dependent variables as it was not included with the rest of the race/ethnicity variables. Additionally, other forms and types of sports activities were not available to include in the study. Finally, some students did not complete the full survey, so their answers were not counted towards compiling the results.

Recommendations

Given the strengths and limitations of this study, I identified ways to further this research. Knowing that sports are associated with sexual activity, it is important that future researchers study how this impact can be made with other forms of extracurricular activities including team and individual sports. Moreover, this study can be repeated and

furthered at the college level and beyond. Additionally, because I had no ability to measure sexual activity status and sports participation at public versus private schools with my source of data, it is important to see how those results differ. In this same notion, it is important to see how outcomes differ from schools who participate in abstinence-only education compared to those who provide comprehensive sexual education. Future studies could also compare research with different states and cities to understand how the sexual risk factors differ across geographical and cultural boundaries. With these parameters in line, there is a need to further track the outcomes of those who experience earlier sexual education and those who received it later in school if at all.

Aside from the changes needed in society, there are changes needed in adolescent sexual health from a research perspective. The first is to provide a detailed analysis of how race plays a part in risky sexual activity over time. Another area needing further research concerns discovering what type of sports play a role in reducing risky sexual behavior. There may be characteristics and benefits that single player sports have over multiple player sports and vice versa. The same can be researched for contact sports verses noncontact sports. Translational research helps to bring these types of queries to the practice setting.

Transitioning research to practice has many benefits to strengthening the work of adolescent health researchers. The findings of this study provide a framework for future practice implications. The first includes using race as a factor and understanding the cultural bounds that sports play in various communities. It would also be beneficial to encourage more individuals to take part in sport activities for their long-term and short-

term benefits as well. This can happen with coaches, school personnel, and community members. Additionally, there is a need for communities to provide access to sports and remove barriers such as cost and travel limitations. Making these adjustments to the community structure provides a medium for social change.

Implications for Professional Practice and Social Change

The professional application of the results of this study can occur through interventions that utilize community factors to deter sexual activity in teen males. This includes afterschool programs in the community that promote healthy relationships and decrease sexual risk behaviors in teen males. Additionally, coaches and school staff members who believe in this mission can have a presence and help with this change. The ecological model takes into account all of these levels as a framework to ensure the mission is carried forward from the individual level through the community level.

Making the type of social change that I was concerned with in this study is critical to ensuring the health of future generations. After completing this study, one proposition I have includes shifting the focus from preventing STDs at the individual level to incorporating these prevention efforts throughout a community. The social change can also concentrate on reaching the high school population at every phase of the sexual process from abstinence to abstinence transition to post sexual debut in order to prevent and deter them from taking part in risky sexual behaviors at earlier ages. Additionally, promoting sports programs and participation and making the programs inclusive of all economic and social backgrounds. At the individual level, the teen's participation in sports may be influenced by their risky sexual activity level, which may also be affected

by family presence and childhood factors, including the family's identified morals, values, and standards. At the organizational level, communities can take part in ensuring sports programs continue and are funded adequately. At the policy level, lifting restrictions that may prevent children from participating in sports programs can push this mission forward. At the societal level, focusing on making sports socially inclusive for all can further promote the mission to reduce risky sexual behaviors of the teens in the communities.

Conclusion

Sports participation has many risk and protective factors associated with it, including peer pressure with drugs and alcohol and good physical fitness (Geisner et al., 2012; Johnson et al., 2011). Previous research has found that for every increase in grade and age, there is an increase in sexual activity (Cummings et al., 2014; Useche et al., 2014), and the results of this study led to the same conclusion, indicating the need for earlier sexual education mediums. In this study, I also found that those who participate in more sports activities tend to participate in less sexual activity and have less instances of alcohol and drug use before sex, also indicating the need for more sports programs. With these instances in mind, it is important that community leaders take advantage of these results and implement the strategies necessary to ensure social change by shifting the focus from preventing STDs at the individual level to incorporating these early sexual risk behavior prevention efforts throughout the community.

References

Brito, M., Davis, M., & Chakrabarti, A. (2014). A cross-national study to compare the knowledge, attitudes, perceptions of sexually transmitted diseases and the sexual risk behaviors of Latino adolescents. *International Journal of Adolescent Medicine and Health, 26*(2), 203-208. doi:10.1515/ijamh-2013-0509

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist, 32*(7), 513-531. doi:10.1037/0003-066X.32.7.513

Centers for Disease Control and Prevention. (2011). Health disparities and inequalities report— United States, 1-116. Retrieved from https://www.cdc.gov/mmwr/pdf/other/su6001.pdf

Centers for Disease Control and Prevention. (2015). *STDs in adolescents and young adults.* Retrieved from https://www.cdc.gov/std/stats15/adolescents.htm

Centers for Disease Control and Prevention. (2016a). *YRBSS frequently asked questions*. Retrieved from https://www.cdc.gov/healthyyouth/data/yrbs/faq.htm

Centers for Disease Control and Prevention. (2016b). *Trends in the prevalence of sexual behaviors and HIV testing national YRBS: 1991—2015*. Retrieved from http://www.cdc.gov/healthyyouth/data/yrbs/pdf/trends/2015_us_sexual_trend_yrbs.pdf

Centers for Disease Control and Prevention. (2016c). *Sexually Transmitted Disease Surveillance*. Retrieved from https://www.cdc.gov/std/stats

Coakley, T. M., Randolph, S. D., Shears, J., & Collins, P. (2017). Values that fathers communicate to sons about sex, sexuality, relationships, and marriage. *Social Work In Public Health,* 32(5), 355-368. doi:10.1080/19371918.2017.1304311

Cummings, T., Auerswald, C. L., & Ott, M. A. (2014). Factors influencing abstinence, anticipation, and delay of sex among adolescent boys in high-sexually transmitted infection prevalence communities. *Journal of Adolescent Health, 54*(5), 593-598. doi:10.1016/j.jadohealth.2013.10.011

Dariotis, J. K., Sifakis, F., Pleck, J. H., Astone, N. M., & Sonenstein, F. L. (2011). Racial and ethnic disparities in sexual risk behaviors and STDs during young men's transition to adulthood. *Perspectives on Sexual & Reproductive Health,* 51-59. doi:10.1363/4305111

Dave, G., Ritchwood, T., Young, T. L., Isler, M. R., Black, A., Akers, A. Y., & ... Corbie-Smith, G. (2017). Evaluating teach one reach one-an STI/HIV risk-reduction intervention to enhance adult-youth communication about sex and reduce the burden of HIV/STI. *American Journal Of Health Promotion,* 31(6), 465-475. doi:10.1177/0890117116669402

Deaner, R. O., Geary, D. C., Puts, D. A., Ham, S. A., Kruger, J., Fles, E., & Grandis, T. (2012). A sex difference in the predisposition for physical competition: Males play sports much more than females even in the contemporary. *Plos ONE, 7*(11), 1-15. doi:10.1371/journal.pone.004916

DiClemente, C. C., & Prochaska, J. O. (1982). Self-change and therapy change of smoking behavior: A comparison of processes of change in cessation and maintenance. *Addictive Behaviors, 7*(2), 133-142. doi:10.1016/0306-4603(82)90038-7

Geisner, I. M., Grossbard, J., Tollison, T., & Larimer, M. E. (2012). Differences between athletes and non-athletes in risk and health behaviors in graduating high school. *Journal of Child & Adolescent Substance Abuse, 21*(2), 156-166. doi:10.1080/1067828X.2012.662433

Glanz, K., Rimer, B. K., & Viswanath, K. (2008). *Health behavior and health education: Theory, research, and practice* (4th ed.). San Francisco, CA: John Wiley & Sons.

Gruchow, H., & Brown , R. K. (2011). Evaluation of the wise guys male responsibility curriculum: Participant-control comparisons. *Journal of School Health, 81*(3), 152-158. doi:10.1111/j.1746-1561.2010.00574.x

Healthy People 2020. (2016). *Leading Health Indicators for Healthy People 2020*. Retrieved from https://www.healthypeople.gov/node/3521/objectives#4470

Hochbaum, G., Rosenstock, I., & Kegels, S. (1952). Health belief model. *United States Public Health Service*.

Hyun, K., Reily-Chammat, R., & Washburn, T. (2011). Sexual risk behavior and contraceptive use among Rhode Island adolescents. *Medicine & Health Rhode Island, 94*(4), 111-113. Retrieved from http://www.rimed.org/publications.asp

Johnson, K. E., Bearinger, L. H., Eisenberg, M. E., Fulkerson, J. A., Sieving, E. R., & Lando-King, E. (2014). Studying the playbook: Which pathways mediate. *Children and Youth Services Review, 44*, 217-244. doi:10.1016/j.childyouth.2014.05.025

Johnson, M. K., Crosnoe, R., & Elder, G. H. (2011). Insights on adolescence from a life course perspective. *Journal of Research on Adolescence, 21*(1), 273-280. doi:10.1111/j.1532-7795.2010.00728.x

Joshi, S. P., Peter, J., & Valkenburg, P. M. (2014). A cross-cultural content-analytic comparison of the hookup culture in U.S. and Dutch teen girl magazines. *Journal of Sex Research, 51*(3), 291-302. doi:10.1080/00224499.2012.740521

Kane, S. P. (2015). *Sample size calculator*. Retrieved from http://clincalc.com/Stats/SampleSize.aspx

Kann, L., McManus, T., Harris, W. A., Shanklin, S. L., Flint, K. H., Hawkins, J., & Zaza, S. (2016). Youth Risk Behavior Surveillance. United States, 2015. *MMWR Surveillance Summaries, 65*(6), 1-174. Retrieved from https://www.cdc.gov/mmwr/volumes/65/ss/ss6506a1.htm

Kantor, L., & Levitz, N. (2017). Parents' views on sex education in schools: How much do Democrats and Republicans agree?. *Plos ONE*, 12(7), 1-9. doi:10.1371/journal.pone.0180250

Laerd Statistics. (2017). *Assumptions in SPSS Statistics*. Retrieved from https://statistics.laerd.com/features-assumptions.php

Moore, M., Barr, E., & Johnson, T. (2013). Sexual risk behaviors of middle school students: 2009 Youth Risk Behavior Survey results from 16 locations. *Journal of School Health, 81*(3), 61-68. doi:10.1111/j.1746-1561.2012.00748.x

Moss, J. L., Liu, B., & Zhu, L. (2017). Comparing percentages and ranks of adolescent weight-related outcomes among U.S. states: Implications for intervention development. *Preventive Medicine*, 105 109-115. doi:10.1016/j.ypmed.2017.09.006

Olmstead, S. B., Roberson, P. E., Pasley, K., & Fincham, F. D. (2013). Hooking up and risk behaviors among first semester college men: What is the role of precollege experience? *Journal of Sex Research, 52*(2), 186-198. doi:10.1080/00224499.2013.843147

Ott, M. A., Ghani, N., McKenzie, F., Rosenberger, J. G., & Bell, D. L. (2012). Adolescent boys' experiences of first sex. *Culture, Health & Sexuality, 14*(7), 781-793. doi:10.1080/13691058.2012.694477

Renfrow, M. S., Caputo, J. L., Otto, S. M., Farley, R. R., & Eveland-Sayers, B. M. (2011). The relationship between sports participation and health-related physical fitness in middle school and high school student. *Physical Educator, 68*(3), 118-123. Retrieved from https://sagamorejournals.com/tpe

Rimer, B. K., Glanz, K., & National Cancer Institute (U.S.). (2005). *Theory at a glance.* Bethesda, MD: U.S. Dept. of Health and Human Services, National Institutes of Health, National Cancer Institute.

Salerno, J., Darling-Fisher, C., Hawkins, N. M., & Fraker, E. (2013). Identifying relationships between high-risk sexual risk behaviors and screening positive for chlamydia and gonorrhea in school-wide screening events. *Journal of School Health, 83*(2), 99-104. doi:10.1111/josh.1200

Secor-Turner, M., Randall, B. A., Christensen, K., Jacobson, A., & Loyola Meléndez, M. (2017). Implementing community-based comprehensive sexuality education with high-risk youth in a conservative environment: lessons learned. *Sex Education*, 17(5), 544-554. doi:10.1080/14681811.2017.1318273

Shade, K., Kools, S., Pinderhughes, H., & Weiss, S. J. (2012). Choosing fatherhood: How teens in the justice system embrace or reject a father identity. *Journal of Community Health Nursing, 29*(2), 91-105. doi:10.1080/07370016.2012.670573

Smith, M. L., Smith, L. A., McNeill, E., & Wilson, K. L. (2013). Factors associated with acceptance of sex before marriage among high school freshmen who have not experienced sexual intercourse. *Canadian Journal of Human Sexuality*, 160-168. doi:10.3138/cjhs.2063

Taylor, M. J., & Turek, G. M. (2010). If only she would play? The impact of sports participation in self-esteem, school adjustment, and substance use among rural and urban African American girls. *Journal of Sport Behaviour, 33*(3), 315-336. Retrieved from http://www.southalabama.edu/colleges/artsandsci/psychology/Journal_of_Sport_Behavior.html

Useche, B., Medina, G., Ross, M. W., & Markham, C. (2014). Your clothes aren't going to magically come off: An exploratory study of U.S. Latino adolescents' reasons for having or not having first-time vaginal intercourse. *Universitas Psychologica, 13*(4), 1409-1418. doi:10.11144/Javeriana.UPSY13-4.ycag

Wilson, K. L., Smith, M. L., & Menn, M. (2013). Abstinence-related word associations and definitions of abstinence and virginity among Missouri high school freshmen. *Journal of School Health, 83*(11), 787-794. doi:10.1111/josh.12095

Ye Hoon, L., Seunghun, H., & Youngjun, C. (2017). Relationship between coaching leadership style and young athletes' social responsibility. *Social Behavior & Personality, 45*(8), 1385-1396. doi:10.2224/sbp.6176

Zamboanga, B., Ham, L., Olthuis, J., Martens, M., Grossbard, J., & Tyne, K. (2012). Alcohol expectancies and risky drinking behaviors among high school athletes: I'd rather keep my head in the game. *Prevention Science, 13*(2), 140-149. doi:10.1007/s11121-011-0252-3