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THE POSITIVE AND NEGATIVE EFFECTS OF SPORTS PARTICIPATION ON
ADOLESCENTS RANGING FROM MIDDLE SCHOOL AND HIGH SCHOOL:

A LITERATURE REVIEW

A MASTER'S THESIS
SUBMITTED TO THE FACULTY
OF BETHEL UNIVERSITY

BY

KYLE KESSELRING

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Abstract

The purpose of this literature review was to investigate the positive and negative effects of sports participation on middle school and high school adolescents. The first step was to investigate the adolescents' amount of success academically by participating in physical activity regardless of the competitive or noncompetitive nature of physical excursion. The second step was to compare the risks and benefits of mental health in adolescents by participating or not participating in sports. The last step was to explore adolescent levels of physical activity and the effects on sports participation. Overwhelmingly, the more adolescents participated in sports and physical activities, the greater the benefit adolescents experienced academically, mentally, and physically.

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CHAPTER I: INTRODUCTION

For years, adolescents have tried developing self-efficacy within or attempting to fit in with their peers to be a challenge. Across the globe, adolescents deal with academic challenges, mental hurdles, and physical differences all while participating in activities as individuals. Participation in sports has provided an outlet for adolescents to improve many aspects of their lives. Sports participation has been one of the major ways to improve academic endeavors and in partnership of improving both mental and physical weaknesses. Generally speaking, adolescents who participated in sports, lived a particular lifestyle, and followed the appropriate dietary structure achieved greater academic success compared to those who did not (Burns et al., 2020). However, few studies have explored middle and high school adolescents' potentially positive and/or negative encounters when participating in sports.

For the first time, I am teaching middle school students in my very own classroom. This is a little intimidating, exciting, and thrilling all wrapped into one. I have coached student-athletes in college and high school in the past, but nothing that compares to this. The classroom is full of young adolescent learners, a majority of whom have been participating in sports for the last six or seven years. On the other hand, there are students who have little to no interest in sports, and I remain eager to have conversations on what interests them.

I selected this research topic in order to mesh multiple aspects of my educational background and upbringing with my overall life experiences that are extremely relevant and about which I'm passionate. I come from a family where academics and sports have always gone hand in hand. Growing up, I was surrounded by a tremendous support system including my parents, friends, and coaches through the opportunities I had to participate in sports. My

experiences have ranged from coaching and playing college football (Division I, II, III, and NAIA), hosting my own radio show as a disc-jockey geared toward adolescents, to working as a media relations coordinator for the USA Water Polo national teams. To this day, I firmly believe this unique combination of factors have shaped me into the person I am today. I have also noticed and been moved by today's adolescents today as they are pressed with challenges of balancing academics, mental health issues, and physical health issues seemingly more than I ever went through when I was their age.

Another important reason for selecting this research topic has to do with the community and school district in which I teach and coach. The community thrives on being extremely active and questions come to surface when residents hear of adolescents who choose not to participate in extracurricular activities. Students have choices when it comes to sports and or after school activities in the community where I live, I can see where it might be overwhelming. According to the Prior Lake-Savage School District website, the high school alone offers 32 sports and or organized activities supported by the athletic department (Prior Lake, 2020). The high school also offers 48 clubs and intramural teams that are supported through the high school as well. In addition to the high school, the Prior Lake middle schools offer 22 clubs and extracurricular activities for the students too (Prior Lake, 2020). In total, the adolescents have the opportunity to participate in 102 activities at their discretion.

The final reason why I selected this research topic is the importance of adolescents participating in or not participating in sports on a national and world-wide level. According to the World Health Organization's website, "more than 80% of school-going adolescents globally did not meet current recommendations" at a minimum of 60 minutes of physical fitness or

activity each day (WHO, 2019). That is 78% boys and 85% of the girls out of 1.6 million students who reported the date, and ranged in ages of 11-17 years of age. I wanted to research the effects of adolescent participation in sports around the world as well as here in the United States. “Approximately 3.2 million deaths occur each year that are attributable to insufficient physical activity (The Sports Journal, 2017). In particular, the lack of physical activity and sports participation in adolescent groups, have been connected to “obesity, cardiovascular disease, high blood pressure, high cholesterol, low self-esteem, and poor mental health including anxiety and depression” (The Sports Journal, 2017). This makes sports and sport participation that much more important. In addition, I prioritized gaining a better understanding of other countries and their results of participation in their contexts.. For example, Hulteen et al. (2017) found that something is missing here in the Americas, Eastern Mediterranean, Southeast Asia, and Western Pacific to be the “most popular activity” (18.9%, 15%, 39.3% and 41.8% respectively). In addition, they found that “adolescent participation results were highly dependent” based on their region in which they resided. Again, I wanted to better understand these results.

Definitions

Throughout this review, I reference a few acronyms involving participation in sports or dealing with mental or physical health. Such acronyms are Body Mass Index (BMI), Moderate-to-Vigorous Physical Activity (MVPA), Organized Leisure-Time Activities (OLTA), Organized Sports Participation (OSP), Physical Activity (PA) and Physical Education (PE). MVPA refers to the level of physical activity adolescents exerted. OSP refers to sports participation with structure in place for adolescents. PA refers to basic physical fitness or involvement where one's body exerts effort. PE refers to an actual class and the study of being

physically involved. Merriam-Webster (2020) defined PE as the “instruction in the development and care of the body.” PA and PE are closely related as both require understanding of one another what it takes to be physically fit and cognisant of physical well-being. Thus, places the emphasis on participation and non-participation as a subcategory of sport participation.

Sports Participation

According to Merriam-Webster (2020), participation is “the act of participating.” The term sports participation refers to involvement with any physical activity while participating as an individual or as part of a team. In doing so, the participant exerts energy and emotion in a physical capacity regardless of the activity.

BMI

This is the acronym for Body Mass Index; it is calculated according to an individual's weight and divided by height. BMI measures an individual's body fat in comparison to one's height and weight.

Organized Leisure-Time Activity

OLTA is measured by activities in which individuals participate. Types of activities include team and individual sports, extracurricular and youth club involvement, and church functions and outings. Active engagement is focused on participation in general and not participation for the sake of winning.

Health Literacy

Health Literacy is based on each individual's own level of knowledge “to obtain, communicate, process, and understand basic health information and services to make appropriate health decisions” (CDC.gov, 2010). For example, an adolescent may be given a prescription slip

and/or consent form from their doctor that needs to be filled out and returned to their school in order to participate in sports. In essence, health literacy is the ability to understand and follow instructions about medical information and procedures.

Extracurricular Activities

According to Merriam-Webster (2020), extracurricular activities do not land “within the scope of a regular curriculum.” In other words, these activities are related to or semi-related to any approved student organization that is linked with the school and are not able to be counted towards academic credits to help one's GPA (Grade Point Average). An example of this is an adolescent who participates in varsity wrestling or basketball. These activities are provided by the school, but participation in them does not earn a player credit toward graduation.

Vigilance

Vigilance is defined as maintaining concentrated focus or attention for long periods of time without a break. An example of this is an adolescent who participated in an extracurricular activity such as chess. This activity demands the adolescent's attention while focusing on current piece moves by the opposing player and thinking ahead for possible moves through “what if” scenarios or “if this, then that” action. The same could be said for a catcher in baseball or softball as they anxiously await the next pitch and simultaneously monitor movement from baserunners..

Statement of Research Question

Based on past and present research of adolescents participating in sports, academic achievement, mental health, and physical activity now demand our attention. As such, this thesis investigates the question, what are the positive and negative effects of sports participation on adolescents ranging from middle school and high school?

Summary

Chapter One explained the purpose and direction of the thesis. In Chapter Two, I review the literature that examines adolescent participation in sports and the effects it has on them academically, mentally, and physically. In Chapter Three, I provide my analysis and evaluation of the literature review, limitations of the research, implications for continued research in the future, and the topic's importance for future consideration.

CHAPTER II: LITERATURE REVIEW

The studies included in this review include middle school to high school adolescent participants. Originally I targeted high school students as they are at the prime age of sports participation and able to provide numerous, practical perspectives toward sports participation (both positive and negative). As the process continued, the decision to add middle school students added monumental depth. Additionally, only empirical studies using sports participation or self-reporting questionnaires and surveys of physical activity in adolescents were used. All of the studies also had to have been conducted within a school setting or at on-site competitions to have been included in this review. Only studies with titles and descriptions specifically tied to the search terms were investigated for possible use, and studies with fewer than 30 participants were excluded from the overall analysis.

Online searches were performed through the use of the Bethel University library along with Google Scholar to help isolate the previous online to present pertinent information for this review. The online databases predominantly accessed for this literature review consisted of SAGE JOURNALS Premier 2019, EBSCOhost MegaFILE, Education Database, SpringerLink Journals Complete, and CLIC Search. Keywords used to identify prospective empirical research were as follows: participation, non-participation, sport participation, extracurricular, health literacy, organized sport, leisure time activities, academic achievement, physical health, and sport specialization. In order to be included in the final set for this literature review, empirical studies had to have used some form of sports participation measurement and provided information on academic achievement, mental health, and physical health related to middle school and high school adolescents.

Narrowing Process

My analysis first began with a keyword search for empirical studies of sports participation in teenagers. Articles began to appear, but nothing sufficient narrowed the scope for this study as subjects and their ages ranged from birth to near death. I then adjusted my search terms. I removed the keyword teenagers and added high school students involved with participation in sports and provided sports participation in correlation with academic achievement (Burns et al., 2020). Again, articles appeared in my search, but they were too broad in scope for my thesis topic. So, I adjusted my search once again and added middle school and high school students. This went well with adolescents participating in sports. It presented mental health studies (Breistøl et al., 2017) that dealt with competitive and noncompetitive sports as well as physical health studies in adolescents (Lo et al., 2018) related to physical fitness. I purposefully included research articles from outside the United States of America as I felt the need to include studies undertaken from a plethora of countries and cultures. For example, the Paakkari et al.(2017) article, checked all the boxes for my search as it deals with health, literacy, and physical activity related to academic achievement. In addition, this article became one of 20 empirical studies that had sports participation as a key measurement for the adolescents involved. Simply, I wanted to ensure my research had enough information on additional activities adolescents may have participated in other than sports. Four of these studies also included academic achievement for adolescents (Badura et al., 2018; Burns et al., 2020; Caldarella et al., 2019; Paakkari et al., 2017).

My search also retrieved 16 empirical studies which focused on mental health issues in adolescents including attitude, anxiety, bullying, depression, enjoyment, fun, motivation, stress,

and mental well-being (Baldursdottir et al., 2017; Breistøl et al., 2017; Brooks et al., 2018; Drane & Barber, 2016; Gerber et al., 2011; Holbrook et al., 2020; Khoury-Kassabri & Schneider 2018; Loprinzi, et al., 2018; McMahon et al., 2017; O'Donnell & Barber, 2018; Perron-Gélinas et al., 2017; He et al., 2018; Reverdito et al., 2017; Rosenvinge et al., 2018; Yavuz, 2019; Yıldizer et al., 2017).

Finally, the last search elicited 10 empirical studies that focused on sports participation and its effects on adolescents' physical health associated with alcohol, diet, exercise, physical activity, physical fitness, sexual activity, smoking, and physical well-being (Abildsnes et al., 2017; Ballester et al., 2015; Graham et al., 2010; Halldorsson et al., 2013; Król-Zielińska et al., 2018; Lisinskiene & Juskeliene, 2019; Lo et al., 2018; López-Sánchez et al., 2018; Michaud et al., 2006; Torstveit et al., 2018).

Literature Review Organization

Chapter Two is divided into three main sections: 1) Sports Participation and the effects on Academic Achievement, 2) Sports Participation and Mental Health, and 3) Sports Participation and Physical Health/Activity.

Sports Participation and Academic Achievement

This section of the literature review includes four studies that relate sports participation in a school setting with adolescents and their academic achievement from their participation. Adolescent subjects from the studies consisted of nearly 31,000 students from the United States of America, Scandinavia, and the Czech Republic. The articles spoke of leisure-time activities with the emphasis on school performance, academic achievement in regards to risk behavior, and

sports participation with that of perception towards academic resilience. Definitions found in Chapter One provide additional clarity.

Badura et al. (2018) aimed to associate adolescents who participated in Organized Leisure-Time Activities (OLTA) and gender, age, engagement in school, stress as it's related to school, academic success, and whether these particular associations differed by any specific trend of those who participate in OLTA. The researchers' wanted to determine whether the adolescents who participated in OLTA potentially acquired help for school from sources other than their family members. The researchers gathered information from 10,483 adolescents from the Czech Republic, just under fifty percent of whom were boys (49.2 %). Adolescents ages 11, 13 and 15 years old provided data for the researchers by completing the Health Behaviour in School-Aged Children (HBSC) survey. Logistic regression was used to adjust the adolescents' gender and age was used to associate those who participated in OLTA along with “four education-related outcomes” (p. 1). The researchers used these outcomes based on Lerner's suggestion. Of the total number of those who participated in OLTA, (n = 1,967) were considered inactive.

Badura et al. (2018) measured OLTA by asking the adolescents to answer yes or no regarding their participation in any of the organized activities. Six types of OTLA were investigated: 1) Team Sports, 2) Individual Sports, 3) Art School, 4) Youth Organizations, 5) Leisure centres or after-school clubs, and 6) Church meeting/singing. The researchers found 81% of adolescents participated in “one or more OLTA (M = 1.51, SD = 1.17)” (p. 5). The researchers found those who participated in OLTA had a higher engagement in school, reduced levels of stress related to school and increased levels of academic success no matter the age or

gender of the adolescent. In addition, those who participated in OLTA had a higher chance of a non-familial helping them with their school assignments compared to those who did not participate. The researchers found this particular association to be “weaker in 15-year-olds” (p. 8). Non-familial is defined as not in relation to a particular family member. Adolescents who participated in OLTA were connected to higher school achievement and enjoyment of school compared to those adolescents who do not participate in activities. The researchers felt those who participated in multiple sports and activities and had the best chance at school achievement as well. Lastly, adolescents who were involved with any kind of OLTA reported higher levels of their activity as compared to their peers who were inactive within their “four education-related outcomes” (p. 8).

Burns et al. (2020) examined adolescents who participated in a self-reported survey that associated them with team sport participation, behaviors in lifestyle, and academic success based on dietary behaviors. Burns et al. (2018) used the 2017 U.S. National Youth Risk Behavior Survey (YRBS) to gather data from 14,765 adolescent boys and girls 12-18 years of age in the United States. The researchers structured the survey for the adolescents and their “age, sex, body mass index, and race/ethnicity” (pp. 448-449). Sports participation was defined as being a part of an individualized or team sport where one competes in which active moment is involved. One hundred forty-four out of 192 schools across the U.S. responded to the survey request, and 81% of the participants provided a clear response. Academic achievement and success adolescents incurred in school while participating in sports or not in sports was broken down into four regression models. The adolescents also recorded their responses in an answer packet. The

adolescents' input was analyzed by three prediction variables that consisted of "sports participation, specific lifestyle behaviors, and specific dietary behaviors" (p. 452).

Adolescents who participated in at least one sport or more during the year also showed a higher level of academic success compared to those adolescents who did not participate in sports. Adolescents who participated in multiple sporting teams reported a higher level of academic success as compared to adolescents who participated in one or none.

Burns et al. (2020) correlated the adolescents' behavior to higher academic achievement when they obtained "daily breakfast consumption (OR $\frac{1}{4}$ 1.40, $p < .001$), sleeping at least eight hours per night (OR $\frac{1}{4}$ 1.21, $p < .001$), and regular consumption of vegetables (OR $\frac{1}{4}$ 1.56, $p < .001$) and salads (OR $\frac{1}{4}$ 1.30, $p < .001$)" (p. 449).

Health behaviors and issues in adolescents who received As and Bs and did not participate in sports were just under 30%, compared to 15% of the adolescents who participated in three or even more sports during the year. "Health behaviors that significantly related to lower odds of achieving mostly As and Bs included consuming alcohol ($p < .001$) and smoking within the past 30 days ($p \frac{1}{4} .016$)" (p. 457). Overall, adolescents who participated in sports, lived a particular lifestyle, and followed the appropriate dietary structure achieved greater academic success compared to those who did not.

Caldarella et al. (2019) made a comparison between the levels of resilience in adolescents who participated in sports to their peers who did not participate based on parent perceptions. The researchers "compared the resilience levels of adolescents who participated in sports ($n = 214$) with the resilience levels of peers not participating in sports ($n = 62$), as reported by parents" (p.1024). Adolescents who participated in sports were defined as those who engaged in physical

activity while attending school. For this study, research was performed at an average sized Utah high school with an enrollment close to 1,700 students. The participants of minority descent were 35% of the students and 46% of those minority students came from low-income households. “Of the 276 parents who participated, 13% described their children as being from minority backgrounds and 21% described their families as low income” (p.1030). Sixty-five percent of the participants were not classified as a minority and just below 50% came from low-income households. The researchers described adolescents who were involved with sports at a young age substantially displayed higher levels of resilience compared to those who didn’t participate in sports.

Caldarella et al. (2019) found a positive correlation between adolescent sports participation and resilience. “Adolescents who participated in youth sports had significantly higher levels of parent-reported resilience (self-regulation/responsibility, social competence, and empathy) than adolescents who did not participate” (p.1024). Researchers pointed out such risk factors as adolescents who were from parental divorce to racial status to sexual activity at an early age. The findings aligned six different risk factors with resilience, including proactive parenting, academic success, and community involvement. Eighty-eight percent of parents who participated in the study believed their adolescent was able to handle problems on their own; 62% of those same parents felt their adolescent student did not know how to think before they acted. The results of the study showed “a positive relationship between the number of sports played and increased resilience scores” (p.1024).

Paakkari et al. (2017) aimed to compare the level of values adolescents who participated and did not participate in sport clubs and how it worked to increase health literacy. The

researchers collected data from the HBSC study conducted in Finland during Spring 2014. Three thousand eight-hundred fifty-two adolescents ages 13 and 15 participated in the survey of which there were 1,953 girls and 1,899 boys. “Out of the sample, 41.8% (n = 1542) participated, and 58.2% (n = 2146) did not participate in sports club activities” (p. 856). Adolescents who participated in sport clubs in conjunction with health literacy were studied “in relation to age, gender, family affluence, school achievement, and physical activity” (p.856).

Paakkari et al. (2017) found that adolescents who participated in organized sporting activities had a higher capacity level in understanding health literacy compared to those that did not participate. The researchers found an increase in health literacy in both adolescent girls and boys from both of the age groups who participated in sport club activities as compared to those who did not. This was evident “for both age groups, among those who were physically active 6–7 days a week, those who had at least moderate (7.5 points or higher) school achievement, and those who belonged to the middle or highest category in the family affluence scale” (p. 856). The researchers also found physical activity improved both physical and mental health in adolescents.

The study suggested adolescents who participated in sports club activities tended to report higher levels of school achievement and better-understood health literacy. In addition, those adolescents who normally achieved at lower to moderate levels in school increased their health literacy as well when they competed in sports club activities. Lastly, adolescents who came from higher family income and competed in sports also had a higher rate of success in school as compared to those with a lower family income. Paakkari et al. (2017) felt this “may have a negative impact also in terms of tending to increase the health literacy gap” (p. 859).

Sports Participation and Mental Health

This section includes 16 studies that had a common theme of sports participation and the positive and negative effects toward adolescents and their mental health. Areas of research conducted, but not limited to were anxiety, attitude, bullying, depression, and stress. The adolescents involved in the studies were from Australia, Canada, Europe, Iceland, Israeli, Italy, Norway, Scandinavia, and The United States of America. Just over 84,000 adolescents completed the self-reported surveys which helped provide outcomes for the researchers.

Baldursdottir et al. (2017) assembled a study to show the types of levels of moderate-to-vigorous-intensity physical activity (MVPA) in adolescent students between 10-19 years of age. Physical Activity (PA) was defined as physical motion which increases one's heart rate in the body. In addition, the researchers also examined any patterns between gender and age of PA and “depressive symptoms among students through their adolescent years” (p. 91). Of the 32,860 student participants from compulsory education and upper-secondary school levels who completed the survey and questionnaire, the researchers were able to use 32,456 (98.8%) of the Icelandic students' submissions for the final record. At the time of this study, compulsory education in Iceland for adolescents was 16 years of age. Questions addressed students' level of participation through organized team sports within the school and the depressive symptoms between the adolescents in the age group that participated. The researchers felt a decline in PA would directly affect an adolescent's mental health as well.

Three separate time periods provided the data where the students were surveyed; the first group was the age range 10-12, the second was 13-15, and the third was 16-19 years-old. The researchers asked “How often do you participate in sports and/or fitness training to the extent

that make you breath considerably or sweat?” and “How often do you participate in sports and/or fitness training (practice or compete) with a sports club or a team?” (p. 93). Based on the self-reports, students were also asked about their feelings toward being depressed with questions such as whether or not they felt lonely or if they wanted to cry. Also, girls and boys just prior to hitting puberty were more inclined to be affected by depression.

Baldursdottir et al. (2017) found that as students age, the more their level of depression increases. The girls also had a higher level of depression as age increased than the boys. Both girls and boys demonstrated lower MVPA levels of depressive symptoms when they competed in organized sports, but girls showed more depressive symptoms than boys. The most pivotal age in PA and depressive symptoms was between 15 and 16 years of age. Perhaps not coincidentally, this is the same time frame as the Icelandic adolescent students move from compulsory to upper-secondary school systems.

Breistøl et al. (2017) aimed to examine the bond between adolescents who participated in “noncompetitive or competitive sports and mental health problems” (p. 28). Competitive was defined as the want to win; whereas, non-competitive was defined as participation for relaxed fun. The researchers felt the health of adolescents was challenged in the western region of the world who participated in sports for that of solely leisure activity. Sports were split between team and individual sports as those who participated in sport were labeled as “not participating, participating in noncompetitive sports, and participating in competitive sports” (p. 28). The study took place in Norway and used adolescent samples (13-22 years old) from students who were enrolled in junior high and high school. The researchers collected 19,567 Strength and Difficulties Questionnaires (SDQ);. SDQ measured mental health issues; it consisted of “five

subscales covering emotional problems, conduct, hyperactivity, peer problems, and prosocial behavior” (p. 30). The SDQ compiled a tally based on symptoms and daily life impact; the answers were calculated by a “three-point scale (from no=0, to minor=1, to severe=3)” (p. 30).

Breistøl et al. (2017) found adolescents who participated in competitive or non-competitive sports had fewer symptoms and problems from impact on their daily life in contrast to the adolescents who did not participate in sports, as well as those who participated in team sports compared to individual sports had fewer mental health issues. “The regression analysis shows a significant negative association between participation in sports, whether competitive or noncompetitive, and total symptom score, as well as impact of problems on daily life” (p. 32). From this, the researchers found a more negative association in participants in competitive sports.

The researchers decided to add three mediators to their study; this helped reduce negative connotations with participation in sport and mental health issues for those who participated in the study. Breistøl et al. (2017) continued to find benefits of participation in sports through groups in competitive sports and an increase in negative connections to symptoms and daily life impact of mental health issues. “These associations persist when controlling for the mediators regular exercise, healthy diet, and number of friends, indicating that benefits are related to other factors as well” (p. 36).

Brooks et al. (2018) aimed to describe the beliefs and attitudes of youth club athletes toward participation in sports and specialization in sport. In addition, the researchers investigated any association between obtaining a college scholarship and the level of sport specialization in which the adolescent participated. The University of Wisconsin-Madison Survey Center, along

with feedback from experts on specific content areas of sports and specialization of sports, conducted an anonymous survey which involved 974 Wisconsin adolescents between the ages of 12-18 years old. Of the total adolescents who participated, 578 were females and 396 were male.

Questionnaires were provided to the adolescent athletes while they were participating in their summer club practices, competitions, and tournaments throughout Wisconsin. The questionnaires comprised four sections and took roughly 15 minutes for each athlete to complete. The four sections consisted of 1) Demographics and information regarding the sports in which athletes participate, 2) Sport specialization status as determined by a widely-utilized but non validated sport specialization scale that has been repeatedly linked with injuries in various youth athlete populations, 3) Attitudes and beliefs regarding sport specialization and youth sport participation, 4) Injury history in the previous 12 months.

Brooks et al. (2018) discovered just under 39% ($n = 381$) of the adolescents considered themselves to be extremely specialized in a sport. The three sports to accumulate the highest number of responses were basketball, volleyball, and soccer ($n = 309$, $n = 272$, $n = 139$). Less than 50 percent (45.8%) of all the athletes who completed the questionnaire felt sport specialization presented a higher chance of sustaining an injury. While 13% ($n = 131$) of adolescents were very concerned about getting hurt while participating in their sport, 91% of the athletes felt sport specialization presented a higher chance of sport improvement on a scale of “quite a bit” or “a great deal” (p. 1). In addition, most of the participants believed sport specialization provided a better chance of them making their school team and or team in college (80.9% and 66.9%).

Brooks et al. (2018) found boys (29.4%) to be less concerned with possible sport injuries than girls (15.5%). A total of 50.7% of the adolescent girls reported participating in sport specialization would increase their chance of sustaining an injury in contrast to 40.7% of the boys. However, in terms of sport specialization 71.9% of the girls felt sport specialization would help them improve in their sport compared to 62.9% of the boys. The researchers also noted three factors the adolescents ranked as extremely important for their participation in sports: 1) the chance to improve (94.8%), 2) physical activity (88.4%), and having fun (87.3%). The three factors with the lowest rank for the adolescents to be extremely important for participation in sports were: to be on the all-star, elite or travel team (71.8%), win (66.3%), and hang out with friends (61.2%). Lastly, just under 16% of the adolescents reported the extreme likelihood of obtaining a scholarship to college based on their “athletic performance” (p. 4) alone. Roughly 40% of the participants reported a likelihood to obtain a scholarship. Also, specialized participants believed it to be “twice as likely to” receive a scholarship for college athletics compared to the athletes who had lower levels of specialization (20.2% to 10.2%).

Drane and Barber (2016) aimed to show participation in sport, the attainment value (an act in which a participant works to achieve a goal or target in coordination with how hard one works for a certain goal), and one's ability through self-concept are relevant to learned experiences of identity and flow in sport. The researchers tested the levels of intensity exhibited by the 1,628 adolescent participants as a direct relation. The 13-18 year-old adolescent participants and “the YAPS participants were from 34 government (45.9%) and nongovernment (54.1%) high schools, from metropolitan (63.3%) and regional (36.7%) areas across Western Australia. The sample consisted of 1,628 students: 954 in grade nine and 674 in grade twelve”

(p. 270). Self-concept was viewed through the lens of adolescents' thoughts and ideas of themselves and what they have seen themselves becoming and or already have become. Sports through self-concept is believed to provide a positive release for adolescents in search of their identity.

High levels of attainment value mixed with the adolescents' ability to develop self-concept in sport, tended to relate more to their identity and flow experience than those who had lower levels of attainment value. The older adolescent group had a higher value of attainment in sports compared to the younger age group. "Only in one group was having higher ability self-concept related to greater experiences of identity and that was in the lower intensity group" (p. 273). Higher levels of intensity compared to lower levels of intensity are based on one's effort put forth by the adolescent in addition to their ages. The more intense the sport, the more effort the participants endured. The older students' value placed on sports showed they obtained a more positive experience with their involvement at a higher level of intensity than younger adolescents did.

Drane and Barber (2016) connected self-concept of adolescents or what adolescents thought of themselves especially during participation in sports. The intensity of the sport in which the adolescent participated in, showed the positive connection between flow (an act or reaction to how an event or situation is going) and one's identity. The researchers found sports do not always generate a positive benefit to adolescents as values and motivation are different in every athlete. When the adolescent finds a connection or an attachment value to a particular sport, this is when adolescents saw a positive experience. In addition, each adolescent is different based on their motivation. Adolescents that have higher motivation to participate in sport see a

positive impact on their identity compared to those who do not.

Gerber et al. (2011) examined the correlation between adolescents who competed in elite sports and stress in increasing or decreasing anxiety and depression symptoms. In addition, the researchers examined the relationship between stress and elite sports participation with that of “perceived quality of sleep” (p. 581) in Olympic to conventional school classes. In this context, stress was defined as strain or pressure placed on one's physical and or emotional well-being. In all, 434 adolescents completed a self-reported questionnaire that had six components tailored to perceived or possible stress, and each component included an answer on a four-point scale. The adolescents also kept a “sleep and sport participation log for seven consecutive days” (p. 585), which covered five days in school and two days off from school, as this was completed by using an eight-point scale. The average age of the boys (n = 156) and girls (n = 278) who participated in the study was 17 years old.

Older adolescents reported higher levels of stress as compared to younger adolescent participants. Female participants concerned with stress reported moderate (33.5%) and higher levels of stress (38.8 %) as compared to males (29.5 % and 21.2 % respectively). Based on the reports, the researchers noticed the athletes of elite stature encountered lower levels of stress (41.5 % to 26.4 %) and slept better (63.9 % to 28.2 %) while involved with Olympic classes as compared to the adolescents who attended classes at conventional schools. The researchers noticed gender not to be a factor when related to good or bad sleep.

Gerber et al. (2011) claimed gender related to scores produced for depressive and anxiety symptoms. Females reported higher scores of depressive (6.73 and 5.55 to 4.94 and 4.75) and anxiety symptoms (2.23 and 0.24 to 2.13 and 0.28) as compared to the males. In addition, scores

were reduced over time by the elite athlete group of depressive (5.45 and 5.01 to 7.04 and 5.70) and anxiety (2.17 and 0.25 to 2.23 and 0.27) symptoms as compared to the non-elite athletes. Age of the adolescents did not correlate “with depression ($r = .13, p < .01$) and trait-anxiety ($r = .11, p < .05$)” (p. 589). Adolescents who had higher levels of stress and poor sleep were more likely to incur depressive and anxiety symptoms as compared to those with low stress and good sleep.

Holbrook et al. (2020) explored whether or not adolescents were associated with depressive symptoms and bullying based on their gender, frequency of exercise, and participation in sports. The researchers acquired data from 4,829 Italian adolescents who ranged from 13-21 years of age. The adolescents self-reported their information by completing the 75 question *Epidemiologia dell'Infortunistica Stradale* survey (EDIT) which investigated their “habits and lifestyles” (p. 34) in order to understand ubiquity and negative health patterns. The researchers assessed the three models of structural equations to associate the difference between depressive symptoms and bullying. In addition, exercise was examined based on the number of days during a normal week the adolescents would engage in a minimum of 60 minutes of exercise. Just under 20% (18.7%) of the adolescents self-reported being the recipient of bullying within the last year. The female adolescents showed higher levels of excluding other peers (67.5%) as compared to males (53.9%). Nearly 37% (36.7%) of the adolescents reported “engaging in exercise” (p. 35) for 60 minutes or more during a normal week while just under seven percent of Italian adolescents reported meeting the recommended minimum of 60 minutes of exercise a day. Female adolescents showed a significant reduction compared to the males toward exercise based on 4-7 days a week (26.3% compared to 45.6%). Non-bullied adolescents

were more likely to exercise than adolescents who were bullies 4-7 days a week (37.5% compared to 33.3%). Those who participated in sports exercised more per 4-7 days a week than the adolescents who did participate in sports (43% to 15.1%).

Nearly 78% of adolescents participated in sports, though males participated more frequently in sports than females (82.1% to 68.8%). Of the adolescents (93.2%) who participated did so at least once a week and participation in sports did not vary in non-bullied and bullied students who played sports (77.2% and 76%). The researchers associated depressive symptoms and bullying were found to be stronger for girls than for boys and adolescents who did not participate in sports than those who participated. Females were affected more by depressive traits of bullying than males. In sum, Holbrook et al. (2020) felt participation in sports helped to shield adolescents from bullying, raise exercise activity, peer communication, and overall mood.

Khoury-Kassabri and Schneider (2018) examined whether participation in youth sport and physical activity in adolescents involved in structured sport programs reduced their participation in troublesome behavior. The researchers compiled questionnaire data from 126 adolescents ranging in age from 13-18. The adolescents $M=15.68$, $SD=1.32$ completed the questionnaire regarding their “involvement in delinquency at the beginning of their sports program and again 6 months later” (p. 357). Nearly 50% (46.3 percent) of those who participated in the study were involved in football or soccer. Almost a fourth of the adolescents participated in horseback-riding, while the rest were involved with basketball, tennis, or martial arts respectively. Over 63% of the participants (63.8 percent) were involved with sport programs twice a week. Roughly one-third of the programs did not have anyone there to supervise the adolescents.

Khoury-Kassabri and Schneider (2018) found a decrease in the adolescents' involvement with all acts of delinquency (petty or minor acts of crime performed by individuals). The adolescents who participated in the questionnaire, responded to answers based on the Likert five-point scale. The answers showed adolescents who participated in structured sport programs, proved to have a reduced level of delinquent involvement. The reduced acts included fewer crimes against people (M=1.97 vs. M=1.43), property (M=1.52 vs. M=1.20) and public disorder (M =2.70 vs. M =2.13). The researchers felt this contributed significantly toward the overall delinquency in adolescents who participated in sports. The researchers concluded that a consistent measure of adolescents involved with structured sport programs, especially those adolescents who are at risk, “significantly decreases youth involvement in delinquency” (p. 362). In addition, they believe efforts to make sport programs more commonly available and priced lower for the inclusion of at-risk adolescents to be an added bonus.

Loprinzi et al. (2018) examined the involvement of school-age adolescents to determine whether their overall physical activity, as well as participation in organized school sports, affected their physical fitness and mental health. In particular, the researchers wanted to look at “the associations between physical education (PE) and sports involvement with physical activity (PA), physical fitness, and beliefs about PA among a national sample of adolescents on” (p. 613). The researchers asked about students’ gender, home life, and physical activity participation. Students who were involved and enjoyed Physical Education (PE) were in school sports and benefited from the extra physical activity compared to those that did not participate or enjoy PE.

The researchers made the effort to include a good number of youth and adolescents with

their opening total number of participants. In 2012, NHANES NYFS interviewed 1,640 children, of those, 510 were adolescents (12-15 years old). Youth and adolescents that answered the questions were randomly selected for the interview. After excluding adolescents with missing data on the covariates (i.e. age, gender, race–ethnicity, BMI percentile, poverty income ratio, asthmatic status, and smoking status), 459 participants comprised the analytic sample. The adolescent students who participated in the study were over 50% caucasian. Eighty-five percent of the adolescents who were involved with PE once a week enjoyed PE.

The researchers determined the importance of having PE as a regular class is the answer to helping students with their physical fitness and long term health. Those who participated in both PE and school sports showed improved health and physical activity levels. The study showed the importance that PE has in schools and how important participation in school sports can be. Adolescents who participated in school sports to those who did not “reported that more PA was needed for good health ($b = 0.23$; $P = .04$), had a higher enjoyment of participating in PE ($b = 0.31$; $P = .003$), engaged in more days of being physically active for 60 min/d ($b = 0.70$; $P = .01$), performed more pull-ups ($b = 2.33$; $P = .008$), had a stronger grip strength ($b = 2.5$; $P = .01$), and performed the plank fitness test longer ($b = 11.6$; $P = .04$)” (p. 616).

As expected, the adolescents who stayed physically active both with PE and school sports scored higher on their BMI and physical fitness tests. As a result, those individuals also had a more positive attitude toward physical activity in PE and in school sports. Students who were active had a positive outlook on their attitudes, health, and lives than those who did not participate in a school sport or enjoy PE. Race was noted in the data, but there was no qualitative data collected to show similarities. The difference in race and sport activity in which one would

see an increase in attitude, could not show proof between race and an increase in a positive attitude.

McMahon et al. (2017) examined a large sample of adolescents from Europe and assessed their association of well-being (WHO-5), physical activity, anxiety (SAS), sports participation, and depressive traits (BDI-II). The questionnaire was completed by 11,110 European adolescents who ranged from 14-16 years of age and participated in the Saving and Empowering Young Lives in Europe (SEYLE) study; 59% of the participants were girls. The adolescents were recruited from over 10 countries in Europe and reached adolescents in 168 schools from across the country. Less than 18% of the sample group of boys participated in physical activity on a daily basis for 60 minutes or more, while the girls reported less than 11% of the WHO-5 guidelines. All combined, 13.6% participated in sufficient levels of activity daily.

McMahon et al. (2017) found the level of activity in boys (7.5 ± 4.4) to be higher than the girls (5.9 ± 4.3) in the previous 14 days reported. The boys (46.6 %) also reported a higher participation level “in at least one team sport” (p. 114) as compared to the girls (19.0 %). Anxiety is defined as an emotion where an individual may feel apprehension or fear and mentally shut down. Those who reported having “no participation in sport or other fitness activity” (p. 114) were just under one third of the participants. Adolescents who had a large amount of physical activity showed lower traits of SAS, BDI-II, and WHO-5. In addition, adolescents who participated in one or more individual or team sports were associated with reduced levels of BDI-II and SAS and increased levels of WHO-5 in both boys and girls. The researchers saw more participation and physical activity in sport from both the adolescent boys and girls which contributed to higher levels of WHO-5 and reduced levels of BDI-II and SAS.

The researchers felt Socio-Economic Status (SES), sexual intercourse, and chronic sickness were associated with the amount of physical activity in which adolescents participated and directly affected mental health as well. The participants were also asked in the questionnaire whether they felt their parents were financially stable to support them and if they had engaged in sex before. Their research was unable to determine the correlation in this particular study. The researchers emphasized “the importance of increasing activity levels among the least active young people” (p. 121) as the goal for each school program and community to help promote WHO-5 in adolescents. The researchers felt adolescents' mental health and WHO-5 are better when physical activity levels are performed regularly.

O'Donnell and Barber (2018) aimed to describe inconsistent data of adolescents through traits of externalizing behavior (feelings or thoughts on violent habits and or traits) through sports with their peers. In addition, the researchers looked into risky and prosocial traits between adolescents and their peers during participation in sports. The researchers used the Youth Activity Participation Study (YAPS) to sample 1,816 adolescents from Australia. Those who participated in the study ranged in age from 13-18, were in grades 9 or 11, and represented 34 schools from across Australia. Just under 55% (54.7) of the participants were girls, and Caucasian descent (81.8%) dominated the sample. The adolescents self-reported their frequent participation in sports which “they engaged in externalising behaviours including minor delinquency and school-conduct issues” (p. 361). In addition, participants self-reported risk and prosocial behaviors through the amount of their peers who were involved in the same sport. The researchers assessed the adolescents behaviours on a nine-item scale on the questionnaire. The adolescents were asked if they had been found to act on such behaviors as “truancy, damaging

public property, dangerous behaviour, physical fights, and trouble with police” (p. 363). Their answers were scored on an eight-point scale. The adolescents also identified the sports they played, the amount of hours they played, and whether the sport was played at school or for recreation within the community.

O’Donnell and Barber (2018) found adolescents who spent more time participating in sports had higher levels of externalizing traits, reduced levels in prosocial friendships (helpful, positive, and intended behavior which promotes acceptance with friends socially), and increased levels of risky friends. Adolescent males reported an increased level of externalizing traits and multiple hours spent participating in sports, and a decrease in levels of prosocial friendships compared to females. An increased level of risky friendships showed the adolescents’ relationship to be important when decreased levels were also lower in prosocial peers. The researchers also found lower levels with risky behaviors due to intensity in the adolescents sport, not to be related with externalizing traits regardless of high, low, or moderate levels involved with prosocial companionships ($p = .465, .913, \text{ and } .450$ respectively).

O’Donnell and Barber (2018) found participants’ sport intensity and externalizing behaviors were positively correlated to both the risky and prosocial companionships. The longer adolescents spent participating in sport, the more their levels of externalizing traits occurred. Participants were exposed to an increase in peer engagement with risky traits and lower engagement levels in prosocial traits. In addition, Grade 11 adolescents reported an increase of recurrent externalising traits, higher intensity in sports, frequent risky friendships, and lower “prosocial peers” (p. 364) as compared to Grade 9 participants.

Perron-Gélinas et al. (2017) examined whether or not sports participation diminished

“depressive and aggressive symptoms with increased peer rejection” (p. 26) in Québec, Canada. Peer rejection was defined as peers socially starting rumors or gossip to intentionally hurt and exclude those from a group. Depressive and aggressive symptoms along with peer rejection were evaluated based on peer nominations of those who were a part of the study. Of the original 326 adolescent participants on the day the students were questioned, 291 were ultimately used (as some had moved or had been unable to provide permission). Just under 51% of the participants were 12-13-year-old girls. Perron-Gélinas et al. (2017) assessed students in grade 6 and then again in grade 7 and noted those as Time 1 and Time 2. The adolescents who participated in individualized sports as well as team sports completed a self-reported evaluation.

Perron-Gélinas et al. (2017) found the boys (but not the girls) who participated showed an increase in peer rejection when their depressive symptoms were high. A few of those symptoms were social blame, social irritation, abandonment, and possible withdrawal from conversations altogether. Nonetheless, adolescents who participated in team sports “mitigated the association between depressive symptoms and increased peer rejection in boys, whereas participation in individual sports exacerbated that same association” (p. 26). Aggressive symptoms had an increase with peer rejection for both girls and boys, but participation in sports did not decrease. The same symptoms were found in depressive cases as well and were found in aggressive symptoms too, but those added an element of being bullied or terrorized by their peers. Peers felt negative social encounters were emotional, hostile, and placed blame. “Analyses revealed that participants in the final study sample were considered less aggressive than those lost through attrition ($t = 2.69, p = 0.01$)” (p. 28).

The researchers demonstrated sustained peer rejection results from T1 to T2. “Higher

depressive and aggressive symptoms at Time 1 were significantly associated with more concurrent (Time 1) and future (Time 2) peer rejection. Frequent participation in individual or in team sports at Time 1 were not associated with concurrent (Time 1) or future (Time 2) peer rejection” (p. 30). The researchers concluded adolescent boys who participated in sports could potentially suffer more depressive symptoms from a higher level of peer rejection. Nonetheless, the adolescent boys may “risk a further increase in peer rejection if they frequently engage in individual sporting activities (either alone or with their families) instead of with same-age peers” (p. 33). The researchers felt participation in team sports could be the appropriate action to help at-risk adolescents.

He et al. (2018) evaluated the association of physical activity (PA), mental disorders over a lifetime, and sport participation in context of how they impact one another in adolescents. The National Comorbidity Survey Adolescent Supplement was conducted in the United States and provided to 6,483 adolescents who ranged in age from 13-18 years old. The participants also completed psychiatric assessments; these were done face-to-face. Then, a parent yielded any medical or family information to the researchers by completing the self-administered questionnaire (PSAQ) provided in the mail. The adolescents who participated in the study self-reported their PA measurement and dichotomized their vigorous activity multiple times per week. In all, 19 “psychiatric disorders were assessed using the Diagnostic and Statistical Manual of Mental Disorders criteria” (p. 628). In addition, regression models were used to evaluate any association of PA to “mental disorders, suicidality, and psychological distress” (p. 628).

Just over two thirds (67%) of the adolescents were physically active on a regular basis. Adolescent boys from Caucasian homes were found to have a higher chance of (PA) and a lower

chance of self-reporting poor health as compared to other participants who were not as active due to their parents “education” (p. 630). Adolescents who were active had a higher chance of participating in sport compared to those who were inactive. Adolescents who were active had a lower chance of mental disorders related to mood (CI = 58.94), bipolar (CI = 30.99), and general distress (CI = 52.96) compared to those who participated and were less active. Inversely, the researchers found PA in adolescents increased their chances of a lifetime of alcohol use (1.78), bulimia (5.84), anxiety (2.04), and posttraumatic stress (1.65). He et al. (2018) noticed a direct association with adolescents who were PA and used alcohol while bulimia was present and involved with an organized sport. The researchers noted PA was not connected to anxiety, behavior issues, ADHD, or suicide. The researchers concluded that PA and mental disorders lasting a lifetime in adolescents will differ depending on the individual.

Reverdito et al. (2017) examined participation in sports as extracurricular variables and relationships in the context of development to be perceived among self-efficacy in deprived adolescents, defined here as the lack of bare necessities that one needs to live (e.g. materials, shelter, and food). Eight-hundred twenty-one adolescents (588 males, 233 females) ranging in age from 13-15 years old participated in the study. They filled-out the “Youth Experience in Sport questionnaire and General Self-Efficacy Scale” (p. 569). The researchers also used the Human Development Index (HDI) to distinguish context in the adolescents' development. A five-level regression model was used to explore the adolescents by sex, age, HDI, years of extracurricular participation in sport and alleged positive sports experience. The adolescents answered 18 questions which had provided four subscale sets of skills (i.e. personal/social, cognitive, initiative, and goal setting). Each represented a “main component of positive

experience of youth in sport” (p. 572). The researchers used the Likert four-point scale to range the adolescents and their answers from 1-4.

Reverdito et al. (2017) observed adolescents who belonged to and lived in cities with increased levels of local government and the HDI results showed higher levels in those who participated in the program for longer periods of time. The researchers showed a positive experience with sports and the appropriate variables are connected to the value of self-efficacy. They also were able to gauge evaluated outcomes and participation in sport being impacted toward promoting “youth development” (p. 574) programs in a positive manner. Adolescents showed more of a positive outcome when engaged with extracurricular activities (32%) compared to perceived influence on sports (17%). In addition, adolescents who participated for multiple years in sports also had a higher “perceived positive experience in sports” as well (.17 to .15) (p. 576). Overall, participation in sports helped to increase adolescents’ perceived levels of self-efficacy.

Rosenvinge et al. (2018) investigated how frequent psychological distress was exhibited in elite athletes and their adolescent peers. The researchers also looked for instances that pointed to frequent eating issues and pushing to be a perfectionist. Participants self-reported their results of “psychological distress, perfectionism, and eating problems (ie, body dissatisfaction and a drive for thinness), as well as their physical training/activity” (p. 115). The researchers conducted a cross-sectional study of first-year Norwegian elite athletes participating in sports at the high school level (n=711) and randomly selected 500 high school students between two schools in Buskerud county due to the students “sociodemographic variables” (p. 116). The adolescents who participated were 15-16 years old. The elite athletes consisted of 611

adolescents and 355 members in the control group of which 199 were male and 156 were female. Participants filled out three questionnaires (HSCL-5) that measured psychological distress on a scale of 1-4. The researchers also used attributes of eating disorders (F-MPS) which assessed perfectionism and distinguished it from those who strive for perfection tendencies and concerned themselves with perfection. This was completed on a four-point scale ranging from strongly disagreeing to strongly agreeing. Lastly, perfectionism EDI-2 was used to assess eating issues on a six-point scale. The two main subscales were dissatisfied with body type and thinness. Participants also provided information about their physical activity and training regiment capacity. Both groups reported the number of hours they had been physically active in the previous four weeks; a majority had “trained >11 hours/week” (p. 118); whereas, physical activity for the control group was “≤6 hours and ≥7 hours a week” (p. 118).

The researchers found psychological distress (being troubled and internally feeling sad, anxious, or distracted) to be on the rise in adolescent students and connected with dietary and mental health troubles. Those who were in the control group scored substantially higher than the data point for psychological distress. Psychological distress within the control group revealed a lack of physical activity in this age group. In the control group, 39% (n=139; 93 males and 46 females) reported involvement in organized sports in their leisure time. The elite student-athlete grouping, however, was found to be the opposite at n=611 of which 390 were male and 221 were female.

Rosenvinge et al. (2018) concluded, “only about 20% of marked psychological distress and up to about 40% of the variance in overall distress points to a need to explore additional physiological, psychological and, psychosocial variables in the future and preferably longitudinal

designs” (p. 121). The researchers suggested a push from parents, coaches, and teachers to help promote pushed strivings toward perfectionistic tendencies and support towards feedback for the adolescents.

Yavuz (2019) conducted research with adolescents to investigate relationships between sports, loneliness (a person who is alone or without companionship from friends), and happiness. The research took place in Elâzığ, Turkey and involved 403 adolescent high school students. Participants in the study ranged between 14-18 years of age of whom 206 were male (51.6%) and 197 were female (48.9%). By grade breakdown, participants included 163 (9th), 100 (10th), and 140 (11th). Data was collected from “the Oxford Happiness Questionnaire Short Form (OHQ-SF), the UCLA Loneliness Scale (ULS), the Attitude towards Sports Scale (ATSS) and personal information form were used” (p.790). The researcher felt adolescents who participated in sports would be able to raise their level of communication, ability to work in a team setting, and develop their socialization skills better than those who do not participate in sports. The researcher also felt adolescents who participated in sports would improve time management skills and became mentally and physically stronger in peer relationships. The researcher felt sports helped adolescents and their social skills especially between those who share the same interests.

The structural equation modeling (SEM), a mixture of factor analysis with regression analysis to help look at the relationship between variables and constructs, was used to collect the data. The three hypotheses in this study included 1) The attitude towards sports in adolescents is associated with loneliness significantly and negatively; 2) Loneliness in adolescents is associated

with happiness significantly and negatively; and 3) The attitude towards sports in adolescents is indirectly, significantly, and negatively related to happiness.

The research shows loneliness within adolescents directly affects happiness both positively and negatively. The research showed a negative response in adolescents' attitudes' between sports and loneliness. Loneliness coincided with happiness as adolescents who were by themselves were unhappy people. Loneliness was lower in adolescents who had a positive attitude when they participated in sports and how they thought about sports. Adolescents' loneliness declined when their attitude toward sports increased. When adolescents are happy, loneliness declines. When adolescents are positive about sports, loneliness also declines. Students who show positive attitudes toward sport increase their levels of social relationships with their peers and garner more polite manners toward other people. Finally, those who participate in sports have a positive attitude towards working together on teams. Loneliness levels are lower when adolescents' social interactions are more frequent and relationships are stronger.

Yildizer et al. (2017) examined the alliance between Social Capital (SC) standards (relationships within social groups that are shared within a society to help function efficiently) and Physical Activity Participation (PAP) in adolescents from Turkey. The researchers also looked for overall Physical Activity Participation (PAP). A total of 1,235 adolescents ranging from 14-18 years of age (grades 9-12) participated and used the International Physical Activity Questionnaire (IPAQ) for measurement. The questionnaire was administered within four cities of Turkey and reached 19 different high schools. The IPAQ consisted of three physical activity (PA) areas of "vigorous, moderate, and walking PA" (p. 28). A simple yes or no question was

included for the participants to note whether or not they had encountered 60 minutes of daily activity towards their PAP overall. The adolescents and their answers were then multiplied according to the number of days and weeks to then be divided by seven to form the cut-off point “for dichotomized PAP as active or non-active” (p. 28). In addition, the adolescents self-reported their Body Mass Index (BMI), health, SC in school, SC in their neighborhood, and SC within their family.

Yildizer et al. (2017) found both male and female adolescents had support from family in school and low levels of casual social authority (i.e. social control in peers, groups, and or school settings). Compared to females, male adolescents reported an increase in levels of interpersonal reliance, good health, obesity, and PAP. Males reported a larger percentage of PAP (77.4%) as compared to females (51%). The researchers identified males with student-teacher interpersonal reliance and casual social authority were quite the opposite when associated with PAP as adolescents with higher interpersonal reliance were associated with a higher probability of PAP. For female adolescents, their interpersonal reliance was quite the opposite when associated with PAP. Overall, male adolescents in the study “were inversely associated with PAP” (p. 30) in gender ($p < 0.05$), casual social authority ($p < 0.05$), and student-teacher interpersonal reliance ($p < 0.001$).

Sports Participation and Physical Health/Activity

This section includes ten studies; the common theme is sports participation and the positive and negative effects toward adolescents and their physical health. Areas of research conducted, but not limited to, were alcohol, exercise, extracurricular activities, non-participation, physical activity, physical education, and physical fitness. The adolescents involved in these

studies were from Iceland, Lithuania, Norway, Poland, Switzerland, Taiwan and The United States of America. Roughly 690,500 adolescents completed the self-reported surveys within each study which helped provide data for the researchers. Again, definitions can be found in Chapter One for clarity.

Abildsnes et al. (2017) focused on two ideas of adolescent participation: 1) The adolescent experience with programs in physical education (PE); 2) The differences between their physical activity (PA) towards sports enjoyment or focus on fun in participation in PE through motion enjoyment. The researchers sampled 181 adolescents (78% of whom were girls; 22% of whom were boys) 15-17 years of age and who attended Norwegian vocational schools. Participants self-reported their information on a questionnaire that assessed their diet, smoking habits, alcohol use, screen time, and active mobility. The researchers also conducted interviews with 23 adolescents in four focus groups and explored the students' experience with programs in PE. The participants also recorded their PA levels, sedentary times, and hours of sleep by the use of SenseWear Armband Mini (SWA). The adolescents “were instructed to wear the SWA for seven consecutive days” (p. 3) at all times.

Abildsnes et al. (2017) established that adolescents who participated in PE as motion enjoyment gathered fewer steps per day in contrast to the improvement and technique group who use PE as sports enjoyment (6,661 to 9,167). Also, the motion enjoyment group reported increased levels of screen time (3.1 hours per day) as compared to the sports enjoyment group (2.4 hours per day). The researchers were not able to show any difference in consumption of single meals from the adolescents. However, compared to those who attended PE for motion enjoyment, they had a higher number of self-reported improper meal cycles and a smoker than

the sports enjoyment group. Both boys and girls who attended PE for sports enjoyment participated more in sports activities that were organized and increased their physical fitness due to their ambition. Due to the amount of time the adolescents spent in organized sports at the high school, roughly 25% of the participants started to drop out due to time constraints. The group of 23 adolescents who participated in the interviews of the focus group of PE programs stressed the importance of teachers who were skilled and likable, for they influenced the instruction from the program in PE and PE courses to include plenty of fun activities in which to participate. Overall, the program revealed that both the adolescent PE groups admired and were influenced by the instruction from the PE programs.

Ballester et al. (2015) investigated the correlation between participation in sport and the vigilance of performance. Vigilance is defined here as maintaining concentrated focus or attention for long periods of time without a break. The researchers also used the Psychomotor Vigilance Task (PVT) to assess the adolescents vigilant performance. The adolescents responded quickly as visual aids would appear on a screen in front of them. The researchers measured the adolescents prior motivation and perceived arousal during their PVT session as well. The researchers recruited 75 adolescents 13-15 years of age to participate; then they broke them into two co-ed groups and differentiated them by athletes ($n = 39$), an individual who competes in sports which tests their physical strength, mental stamina, and overall endurance, and non-athletes ($n = 36$). The athlete adolescents were measured during one session of their Spanish League training of their junior soccer team by using the “Leger Multi-stage fitness test to estimate their aerobic fitness level” (p. 3). This particular group trained three times a week and competed in matches during the weekends. All of the adolescent athletes reported having five or

more years of soccer training previous to this study. The non-athlete group reported no sports experience prior to this study and reported fewer than two hours a week participating in sports outside of school.

Ballester et al. (2015) found the athlete group had a higher cardiovascular fitness level and lower resting heart rate compared to the non-athlete group. Also, the athlete group demonstrated a greater performance level within the PVT session than the non-athlete group. The athlete group recovered faster from their elevated heart rates than did the non-athlete group too. However, the researchers did not find any relationship connecting cardiovascular fitness and performance from the PVT assessment. They were able to show higher scores of motivation and perceived arousal levels in the athlete group compared to the non-athlete group and Motivation toward the Task. The researchers were unable to show a notable relationship connecting “the PVT main dependent variables and the main index of cardiovascular fitness (TTE) were significant (all $r^2 < .04$, and all $ps > .27$)” (p. 8). Ballester et al. (2015) were able to link this study to a positive relationship with adolescents who participate in sport and their vigilance of performance.

Graham et al. (2010) built a case to predict moderate-to-vigorous physical activity for adolescents who participate in sports, exercise, and fitness and their attitudes toward them five and 10 years after participation. The researchers noticed a trend of obesity in youth and adolescents and felt privy to looking deeper into the issue. There were 1,902 adolescents ranging from 11-18 years of age took part in Project Eating and Activity in Teens from the Twin Cities area in Minnesota beginning in 1997-1998. On a weekly basis over the next five to 10 years, those who participated provided their moderate-to-vigorous physical activity (MVPA). The

participants “reported weekly moderate-to-vigorous physical activity and attitudes toward sports, exercise, and fitness in Eating and Activity in Teens-I (1998–99), Eating and Activity in Teens-II (2003–04), and Eating and Activity in Teens-III (2008–09)” (p. 130).

Physical activity was described as the movement of the body when energy is exerted which causes one sweat from the motion used. Participants were tested and or re-tested if needed over a two-year span to generate the appropriate data. Self-reporting the number of hours the participants engaged in physical activity was monitored by their moderate-to-vigorous physical activity. Questions asked of the participants towards their attitudes were “How much do you care about (1) ‘staying fit and exercising?’ and (2) ‘doing well in sports?’” (p. 131).

The researchers were in need of a few other baseline informational data to help give them a starting point such as height, weight, body mass index (BMI), sport participation over the past 12 months, and race. BMI was defined as the measurement of fat in one's body as compared to that of their height and weight. Fifty percent of the adolescents who participated showed attitudes of caring for exercise and fitness. Seventeen percent of the participants cared very little or did not care at all about providing their exercise and fitness information. The researchers found that self-reporting was the best way to measure this, but realized each individual very well could have fabricated their information weekly just to present their information. Overall, the researchers saw an increase in positive attitudes in adolescents toward sports, exercise, and fitness 5-10 years later. The study supported the importance of adolescent physical activity at a young age to help support the continuation of that same activity 5-10 years later and beyond.

Halldorsson et al. (2013) investigated the relationship between adolescents and their participation in sports (activities where people play for fun or for income) and the possible use of

alcohol. The researchers wanted to determine whether adolescents who were involved in sports would have a decreased influence and probability of using alcohol by staying active in sports as compared to those who did not participate in sports. The authors further defined formal sports as sports the school was in charge of or supported financially and informal sports as those that were performed leisurely or on students' time schedule.

The researchers made a conscious effort to include as many adolescent students on a particular day for the sake of the research, to find out whether or not students participating in sports also consumed alcohol. There were 10,992 students in grades 8-10 who completed a questionnaire of which 50.2% were girls. All participating students who completed the questionnaire were supervised by the Icelandic Centre for Social Research and Analysis team. The study hypothesized that students who participated in sports wouldn't use alcohol. The researchers found a higher number of adolescents had consumed or been around alcohol due to peer influence. Over 60% of adolescents who "used alcohol have friends that have been drunk ($t = -37.953$, $df = 10,484$, $p = 0.000$) and around 30% that have been drunk have friends that have been drunk ($t = -41.887$, $df = 10,498$, $p = 0.000$)" (p. 8).

Halldorsson et al. (2013) believed young people simply wouldn't have had time as their families would be closely watching their every move and their friends or groups of formal sports teams wouldn't use alcohol either. Adolescents that came from a broken home were more likely to use alcohol because their parental monitoring was lower than the students' families who did keep a close eye on them. "A positive linear relationship between the frequency of informal sport participation and alcohol use, where increased participation is associated with higher use of alcohol" (p. 9). Also, adolescents who were involved with formal sports used alcohol less

frequently as compared to adolescents who were involved with informal sports. “Thus, 44.6% of those that participate in sport less than once a week have used alcohol” (p. 8).

The researchers also felt adolescents had more structure and showed fewer distractions when participating in sports. One issue in this study was the realization that a proper definition of formal and informal sports had not been not clearly defined to ensure particular sport participation. Over 36% of the adolescents used alcohol and over 10% had been drunk within the previous month. “Also, over 11% that have been drunk in the last 30 days have friends that have been drunk ($t = -24.224$, $df = 10,417$, $p = 0.000$)” (p. 8). Lastly, adolescents who lived with both of their parents, spent time with them, and were supervised by their parents were not connected with alcohol use.

Król-Zielińska et al. (2018) aimed to assess the connection of motives of intensity in physical activity (PA) and undertaking PA in adolescents. The researchers recruited 1,231 adolescents (716 girls and 515 boys) who ranged from 15-17 years of age. The researchers solicited 20 high schools throughout Poland to complete the International Physical Activity Questionnaire-Long Form (IPAQ-LF) and the Motives for Physical Activity Measure-Revised (MPAM-R). The IPAQ-LF purpose is to ascertain the type of PA people participate in during their daily activities. The MPAM-R consisted of 30 items that assessed five different categories and used a seven-point Likert scale which ranged from not true to very true for the adolescents “reason for participating in each of the items” (p. 3). The researchers also used the International Database for Research and Education Support (INDARES) to examine the adolescents' PA and sport preferences. The adolescents self-reported each of the seven days of their PA. From these data points, the researchers ranked the adolescents PA effort as moderate, normal, and vigorous

intensity. They also connected PA of the adolescents to five motives: interest, competence, appearance, fitness, and social.

Król-Zielińska et al. (2018) found males had an increased level of PA and undertook higher levels of moderate and vigorous intensity as compared to females. Males also had a higher score with “motives, interest, competence, social ($p < .001$), and fitness ($p = .020$)” (p. 3), but had a lower appearance score than the females. The researchers also noticed boys had high positive levels between PA overall and total intensity in motives. This did however exclude the connection between social motives and vigorous intensity in PA. Females had an increased level of overall PA, low and vigorous intensity in PA, and reported a larger score with total PA motives. The researchers were able to predict just under 11 % variance with PA of vigorous intensity in the male participants. The males also scored high on their appearance and competence PA motives which directly correlated to increased levels “of vigorous intensity of PA” (p. 4). For females, the researchers identified just over a seven percent variance of PA toward vigorous intensity. The increased scores of appearance and competence in PA motives for females allowed the researchers to again be able to predict PA levels of vigorous intensity to be higher as well. Lastly, low and moderate levels of intensity in PA were noted by the researchers to not be important, even though boys and girls had conflicting overall PA (6.3 % for the boys and 4 % for the girls).

Lisinskiene and Juskeliene (2019) examined the connection between engagement with physical activity (PA) - movement of the body which produces energy - and physical inactivity in Lithuanian adolescents and their devotion to parents and peers. The researchers surveyed 835 students (355 males, 480 females) ages 15-18. The participants were selected “from the six

mainstream schools from the three largest cities of Lithuania by applying a multistage sampling procedure” (p. 3), and they were split into two groups (15-16-year-olds and 17-18-year-olds).

Lisinskiene and Juskiene (2019) compiled answers from the adolescents from the seven days prior. Responses about effort levels ranged across sports, activities, P.E. lunch, after school, evenings, and over the weekend. A “1” indicated a low PA level and a “5” indicated a high PA level. In addition, the researchers used “the inventory of parent and peer attachment (IPPA)—the mother, father, and peer version” (p. 3). The IPPA evaluated three areas of perception of positive and negative relationships with their fathers, mothers, and peers: 1) Trust, 2) Communication, 3) Alienation.

Participants also provided responses about parental acceptance, whether friends can sense when they are upset, and anger toward their parents. The researchers found males in both groups exhibited more PA than the females (Cohen’s $d = 0.27$ $d = 0.21$).

Males scored overwhelmingly higher than the females in parent and peer attachment, while females scored substantially higher than the males with their peers in attachment, trust, and communication (Cohen’s $d = 0.57, 0.49, 0.67$). Adolescents of the SES grouping scores were on average higher for parent and peer attachment as well. PA in adolescents had a lower level of correlation to the father ($r = 0.18, p = 0.01$) and even lower levels for the mother ($r = 0.13, p = 0.01$) for attachment. The communication ($r = 0.16, p = 0.01$) and trust ($r = 0.17, p = 0.01$) levels between both the mother and father were low. The researchers also found a negative connection of alienation with the father ($r = 0.13, p = 0.01$). They also noticed a positive relation to the adolescents parents when they were physically active. Overall, communication in adolescents “to

father, male gender, a younger age, and a higher SES are important factors in relation to adolescent physical activity” (p. 1).

Lo et al. (2018) investigated the relationship between adolescents through their school environment and “after-school physical activity with health-related physical fitness” (p. 1). The researchers found numerous inconsistent outcomes amongst the 649,442 (N = 312,365 girls and N = 337,077 boys) Taiwanese students in grades 7-9 who participated. The researchers completed a survey that measured the student participants physical fitness, academic environment, and urbanization of the school. In this case, physical fitness was defined as physical activity or sport movement conducted by an individual that can also be tied to ability. A school environment was defined as the climate in which the school students attend looks, feels, and influences them to succeed to the best of their ability. The after-school physical activity for adolescents measured BMI, sit-ups, running, seated reach, and long jump. The size of the school (both inside and outside) and the location were also measured. The researchers found schools with adequate facilities for physical activity encouraged adolescents to participate in physical activities.

Lo et al. (2018) included urban and non-urban adolescents. The urban locations consisted of the three largest cities in Taiwan: Kaohsiung, Taichung, and Taipei. The non-urban group was noted as the rural group for this particular study. The researchers found both the girls and boys of the urban group had a higher level of endurance and muscle power as compared to the rural group, and the BMI in girls from the rural group was also lower than the urban group. Cardiovascular exercise and power training were lower in the boys of the large schools, and girls exhibited the same lower level of endurance and power in large schools. However, the girls from

the large schools scored a little higher out of the groups for BMI totals. “Of the adolescents who participated, “7.08% of the boys (N = 21,101) and 6.87% of the girls (N = 19,249) lived in rural areas” (p. 5). The BMI values of both rural and urban area boys were comparable to one another. However, the rural area school girls had “significantly higher BMI values than those who attended urban schools“ (p. 5). The researchers found no difference in BMI from the boys who attended varied sized schools, while girls who attended smaller sized schools had a larger BMI of $p < 0.05$ compared to those from the rural and urban groups of adolescents.

Lo et al. (2018) also found health-related measurements of the adolescents paired based on their school facilities and if they were involved with physical fitness after school. “Boys in schools with access to a sports field performed significantly better in the physical fitness tests than those without access to a sports field, except for the flexibility test” (p. 6). Additionally, only 10% to 30% of the participants had poor fields or indoor gyms to use for their physical activity, and just over a quarter of the students exercised after school. Not surprisingly, “The BMI and flexibility of adolescents of both genders who participated in exercise after school were better than those of adolescents who did not” (p. 6). The researchers showed factors of urbanization, size of school, facilities at the school and adolescents who participated after school in physical activities were more important than physical fitness in adolescents in Taiwan.

López-Sánchez et al. (2018) analyzed the levels of physical activity, movement of the body, which exerts energy that causes an increase in one's heart rate in adolescents. The researchers randomly selected 5,141 participants from 20 schools across the country; of the adolescents who participated, 2,502 were boys (48.7%) and 2,639 were girls (51.3%). The

researchers provided the Physician-based Assessment and Counselling for Exercise (PACE) questionnaire for the adolescent participants (ages 11-19) to complete.

López-Sánchez et al. (2018) found adolescents reached the guidelines of 60 minutes of Moderate-to-Vigorous Physical Activity (MVPA) each day “on average 3.6 days/week (SD = 2.1)” (p. 1). The adolescents were labeled as active or inactive according to their physical activity levels. Over 33% (33.4%) of the adolescents were labeled active; those participants followed guidelines of being physically active for five days or more per week. Just under 67% of the participants were labeled inactive. These adolescents did not participate in physical activity five days or more per week. Overall, boys were more active (just under 40%) as compared to girls (just over 27%). Boys were also more likely to meet daily recommendations of physical activity than girls (0.7 days more a week).

Overall, the 11-12 year-old adolescents were more physically active than the 13-19 year old group. Based on the findings, the researchers suggested Lithuanian adolescents needed to increase their levels of physical activity and adopt a program that they will follow based on the results. Suggestions included the implementation of multidisciplinary programs to reinforce the practice of physical activity and the development of specific movement guidelines.

Michaud et al. (2006) investigated Swiss adolescents and their participation in extracurricular sports. The researchers analyzed a direct correlation between sports activity or sports inactivity to that of smoking or drinking and a healthy life balance. The focal points of the study were perceived health, health attitudes, and behavior of the adolescents.

The Swiss apprentices and students, ranging from 16-20 years old, were selected at random and given a questionnaire to fill out. The survey and questionnaire was performed by all

of the 7,428 adolescents who were approved by the ethical committee of the Faculty of Medicine of Lausanne. Both students and apprentices sport activity was down compared to past years in the adolescent age group. The researchers also looked into the socio-demographic and lifestyle of these particular adolescents whether or not it correlated to sports practice among Swiss adolescents. They also anticipated a positive correlation between socioeconomic level and school grades.

The researchers found a direct correlation between student and apprentice activity and their chances of following a healthy diet. Interestingly, the adolescents who participated in sports outside of the observed schools had disposable family income to do so and tended to smoke and drink more. Michaud et al. (2006) were concerned about the Swiss and the percentage of adolescents who responded as active participants in sports activity compared to both the apprentices and the students. Of the 7,428 adolescents who responded, ($p < 0.01$) showed a decrease in sport activity and involvement. Adolescents who participate in sport activity are found to be involved with organized sports through their school in which they attend. One of the biggest reported obstacles was the amount of time that adolescents did not have compared to years past. Work and work schedules seemingly got in the way of limiting organized and leisure sports activities. The potential for an increase in physical activity could have been avoided by practitioners who schedule working hours for those who participate in sports. The researchers' concern became the health and well-being of the adolescents if a downward trend of sports activity were to continue. A healthy lifestyle in those who participated in sports was visible compared to those who did not participate in sport.

Torstveit et al. (2018) investigated the correlation of Organized Sports Participation (OSP) to that of lifestyle habits and choices made by Norwegian adolescents. The researchers surveyed 13,269 adolescents who were 13-17 years of age and enrolled in junior high or high school in the southern part of Norway. Ninety percent of the junior high students and 80% of the high school students completed an MBLR model survey online during normal school hours. The MBLR model “adjusted for gender, age, and parental education, were used to investigate the associations between OSP and adolescent substance use, dietary habits, physical activity level, passive vs active transportation, screen time, and sleep duration” (p. 2384).

Torstveit et al. (2018) questioned adolescents on the use of alcohol, tobacco, eating candy, four meals of the day, drinking soda, physical activity, and sleeping habits. Adolescents who were involved in OSP were connected to lower chances of alcohol intoxication and tobacco use. The adolescents OSP was also connected to reduced chances of “having irregular intake of meals overall (total irregular meal pattern: 0.56; 0.51-0.62), and specifically irregular intake of each of the four main meals: breakfast (0.58; 0.53-0.63), lunch (0.62; 0.57-0.68), dinner (0.79; 0.70-0.89), and evening meal (0.70; 0.60-0.72)” (p. 2389). Food choices such as beverages/soft drinks and candy resulted in reduced odds of use by adolescents involved with OSP as well. In addition, adolescents revealed a reduced frequency of not being physically active and a lower chance of interrupted sleep both during the week and weekends.

Torstveit et al. (2018) indicated OSP in adolescents was connected to “significantly decreased odds of unhealthy lifestyle habits, including substance use, irregular meal patterns, high intake of unhealthy food and beverages, low intake of healthy food, low physical activity level, high screen time, using passive transportation, and having a short sleep duration compared

with adolescents not participating in organized sports” (p. 2389). Adolescents in OSP had a reduced frequency for unhealthy habits compared to those who did not participate. Torstveit et al. (2018) also expressed that OSP promoted healthy lifestyle habits, especially for adolescents and suggested “healthy adolescent development, including increasing motivation for continuous participation in organized sport, would be a wise investment” (p. 2394).

CHAPTER III: DISCUSSION AND CONCLUSION

This study reviewed the positive and negative effects of sports participation involving adolescents 11-19 years of age in middle school and high school. The major themes found during the review were directly and indirectly related to academic achievement, mental health, and physical activity within a total of 30 studies. The outcomes of each study revealed positive correlations in adolescents between sports participation and resilience (Caldarella et al., 2019), self-concept and identity (Drane & Barber, 2016), experience and engagement (Reverdito et al., 2017) compared to negative correlations. However, the literature reviewed here did identify a few negative connections between adolescents and sports participation, especially when it came to those who participated in more competitive sports rather than non-competitive sports (Brestøl et al., 2017) and/or attitudes toward sports and loneliness (Yavuz, 2019).

Sports Participation and the Effects on Academic Achievement

One causal influence of sports participation was a clear increase in student academic engagement and achievement. While this important effect was noted in just four of the 30 studies reviewed, it revealed an increase in students' academic performance and a decrease in stress related issues in each one. First, adolescents who were involved in sports regardless of their age or gender showed greater academic success and higher levels of engagement towards school itself than those who did not participate in sports (Badura et al., 2018). Second, adolescents who participated in sports also had significantly better time management and organizational skills to succeed in academics compared to those who did not participate in sports (Burns et al., 2020). Adolescents also endured risk factors that coincided with resilience as a student in conjunction with parental guidance and community support of their efforts as a student participating in sports

(Caldarella et al., 2019). Lastly, those adolescents who participated in sport clubs that were outside of the regular school organized structure saw higher levels of success in school compared to those who did not participate in sport clubs (Paakkari et al., 2017).

Sports Participation and Mental Health

Surprisingly, a common influence of sports participation in adolescents was a decrease in mental health issues. Of the articles reviewed, 16 of the 30 involved sports participation and mental health in some way shape or form dealing with anxiety, attitude, bullying, depression, enjoyment, fun, motivation, stress, troubled behavior, and well-being. Three studies identified that boys have lower levels of anxiety, depression, and stress overall as compared to girls (7.2% to 6.3%, 32% to 30.2%, and 38.8% to 21.2%) when it comes to participating in sports and their mental health (Baldursdottir et al., 2017; Gerber et al., 2011; McMahon et al., 2017). In contrast, Holbrook et al. (2020) found depressive symptoms and bullying were stronger among girls than boys as well as in adolescents who did not participate in sports as compared to those who did participate. In contrast, Perron-Gélinas et al. (2017) identified that boys (not girls) who participate in sports showed increased levels of peer rejection when their depressive symptoms were high. A few of the symptoms that were experienced were social blame, social irritation, abandonment, and possible withdrawal from conversations altogether. Yavuz (2019) discovered that adolescents' encountering loneliness declined when their attitude toward sports increased. Simply, when adolescents are happy, their loneliness decreases. A related study, He et al. (2018) determined that adolescents who participated in sports had significantly lower chances of forming mental health issues related to distress, bipolarism, and mood. Relatedly, Khoury-Kassabri & Schneider (2018), O'Donnell & Barber (2018), and Yıldız et al. (2017)

found decreased levels of risky behaviors and delinquent acts in adolescents due in part to the intensity of the sports in which they participated. Similar studies (Breistøl et al., 2017; Drane & Barber, 2016; Loprinzi et al., 2018; Reverdito et al., 2017) found that adolescents who participated in competitive or non-competitive sports exerted more effort and had fewer health problems from the impact on their daily lives in contrast to those who did not participate in sports. In addition, those who participated in team sports, as compared to individualized sports, had lower levels of mental health issues and increased values of self-efficacy. Equally as important, Brooks et al. (2018) found that adolescent girls (50.7%) were more concerned mentally toward sustaining a physical injury while participating in a specialized sport than boys (40.7%). In addition, Rosenvinge et al. (2018) found psychological distress (being troubled and internally feeling sad, anxious, or distracted) to be on the rise in adolescent students who didn't participate in sports and connected this to dietary and mental health troubles.

Sports Participation and Physical Health/Activity

The most common influence of sports participation in adolescents was an increase in physical health and activity. Of the 30 articles reviewed, 10 focused purely on sports participation and physical health and activity. The topics on which researchers focused most heavily were alcohol and drug consumption, exercise, extracurricular activity, leisure or non-leisure activity, physical education, and physical fitness. Motives through engagement of physical activity (PA) was a key component (Abildsnes et al., 2017; Graham et al., 2010;, Król-Zielińska et al., 2018; Lisinskiene & Juskeliene, 2019) that focused on adolescents who were involved in (PA) through physical education (PE), sports participation and their differences between their activity in PE, and overall enjoyment or fun in PE. Overall, adolescents who

participated in sports had positive attitudes toward exercise and fitness. The researchers found both boys and girls who attended PE for sports enjoyment participated more in sports activities that were organized and increased their physical fitness due to their ambition and attitudes. The researchers, however, did find that boys had an increased level of PA and higher levels of moderate and vigorous intensity as compared to girls. Relatedly, Ballester et al. (2015) and López-Sánchez et al. (2018) found that adolescents participating in sports had a higher cardiovascular fitness level and lower resting heart rate as compared to the non-athlete group or those who did not participate in sports regularly. Adolescents who were labeled as active participants (33.4%) followed guidelines of being PA for five days or more per week and had higher levels of fitness. Also, the sports participating group recovered faster from their elevated heart rates than did the non-participating group as well. In addition, Lo et al. (2018) found both the adolescent girls and boys from urban areas had a higher level of endurance and muscle strength as compared to those from the rural areas. Additionally, those same girls and boys that attended schools with adequate facilities for PA encouraged adolescents to participate in physical activities compared to the rural areas. Three different studies (Halldorsson et al., 2013; Michaud et al., 2006; Torstveit et al., 2018) identified the influence of alcohol use in adolescents and its increased users who have consumed alcohol for participants in sports coming from a home where both parents were not closely monitoring them. The researchers also found a correlation between sports participation and PA to adolescents who are non-participants. Those adolescents who are non-participants, are linked to a non-healthy lifestyle that incorporates alcohol and drug use. Adolescents involved in Organized Sports Participation (OSP) had a reduced frequency for unhealthy habits compared to those who did not participate in PA. In addition, researchers found

over 60% of adolescents from broken homes consumed alcohol and had friends who had been drunk ($t = -37.953$, $df = 10,484$, $p = 0.000$) and roughly 30% of the adolescents had been drunk and had peers who had also been drunk ($t = -41.887$, $df = 10,498$, $p = 0.000$). Conversely, adolescents who participated in sports and lived with both parents, were supervised, and spent time with their parents, were not connected with alcohol use.

Analysis

The three categories that emerged from my analysis were not totally surprising. Not only does this review provide important information for adolescents and their overall activity, but also it shows parents and guardians a platform that academics and physical activity of adolescents increase and mental health troubles or concerns decrease while participating in sports. This review also provides important insights as it pertains to practical applications in school districts and the classroom. For example, when adolescents are participating in sports, their school work, mental health, along with physical health all benefit. In short, the more active adolescents are, the healthier they will be mentally and physically as compared to those who do not participate in sports or extracurricular activities.

What makes this research and data extremely compelling is that in the majority of the articles reviewed, the researchers constantly found adolescents' who participate in sports or extracurricular activities to be in the best interest of their overall health (Baldursdottir et al., 2017; Breistøl et al., 2017; Loprinzi et al., 2018; Paakkari et al., 2017). In addition, the researchers identified the significance of being active and participation in activities to being a key factor in the adolescents' lives (Abildsnes et al., 2017; López-Sánchez et al., 2018; McMahon et al., 2017; Yıldız et al., 2017). The studies reviewed here confirms that

participation in sports for middle school and high school adolescents is decidedly positive as academic successes increase, risks of mental health issues lower, and increased levels of physical activity increase.

Professional Application

Based on the data in this literature review, sports participation and extracurricular activities prove to be beneficial in the improvement of adolescents with their academic achievement. In addition, adolescents who participate in sports and extracurricular activities benefit from a reduced risk of mental health troubles and an increased level of physical health. Throughout the numerous studies reviewed, peer influence and overall enjoyment of sports appeared to be most effective in increasing adolescents' levels of physical activity. Coincidentally, adolescents had a higher risk of developing mental health issues from their bullying peers, which in turn sparked anxiety, depression, and stress. It should be mentioned that while adolescents obtained increased levels of enjoyment through sports participation, adolescents do still experience stress in some capacity. While participating in OLTA, Badura et al. (2018) noticed increased levels of engagement in school, a reduction of stress related to school, and an increase in academic success no matter the age or gender of the adolescents. To help decrease stress related concerns and increase enjoyment even more, middle school and high school adolescents could easily adapt to relaxation techniques, work with a dietitian, or communicate with the school teachers and or guidance counselors regarding any possible stressors. This could be done daily or weekly as the school saw fit.

Limitations of the Research

Each category of research, other than sports themselves, presented data that focused on mental health and physical activity of adolescents. The studies provided a variety of outcomes in the adolescents' involvement which spanned the globe. That said, the data seemingly never changed from one country to the next. All of the data pointed to increasing marks of academic achievement, decreasing levels of mental health issues, and increasing levels of physical activity. My research however, excluded children younger than the adolescent age range of 11-19. I felt by doing so, my research would have included too broad a range of individuals. Condensing the search to adolescents 11-19 years of age, directly aligned the data I examined with my guiding question.

A few things that did not appear in my research and review of the articles were suicidal thoughts, tendencies, and/or self-mutilation. As an adolescent myself long ago, my group of friends and I experienced such feelings and emotions towards these particular actions, but never acted on them and were able to communicate with one another for support. However, we did know of a few students that did try to commit suicide and cut themselves due to academic pressure and social-emotional transgressions. I was also shocked not to come across articles that focused on adolescents quitting school or sports.

Another topic I thought I would encounter was the influence of siblings (brothers and sisters) on participation in sports/extracurricular activities, for the influence of siblings was a significant part of my life. The main reason I was involved with sports at such a young age was because of my brothers. My brothers would talk to me about rules, situations, and results of so many sports, I remember those conversations like it was yesterday. Yes, my parents enjoy sports,

but watching my brothers play sports and come home and talk about sports truly molded me into the sports-minded person I am today.

Implications for Future Research

It would be intriguing to investigate the physical side effects on adolescents who participate in sports and then follow up 20 years later. Of the 10 studies regarding physical health and activity (Abildsnes et al., 2017; Ballester et al., 2015; Graham et al., 2010; Halldorsson et al., 2013; Król-Zielińska et al., 2018; Lisinskiene & Juskiene, 2019; Lo et al., 2018; López-Sánchez et al., 2018; Michaud et al., 2006; Torstveit et al., 2018) a follow up questionnaire or in-person survey could appear on their overall physical health to determine the benefits of having participated in sports during their adolescent years. Additionally, the survey would help identify whether participation helped or hurt their current physical state. In connection with the 10 studies, the 16 empirical studies regarding mental health (Baldursdottir et al., 2017; Breistøl et al., 2017; Brooks et al., 2018; Drane & Barber, 2016; Gerber et al., 2011; He et al., 2018; Holbrook et al., 2020; Khoury-Kassabri & Schneider 2018; Loprinzi, et al., 2018; McMahon et al., 2017; O'Donnell & Barber, 2018; Perron-Gélinas et al., 2017; Reverdito et al., 2017; Rosenvinge et al., 2018; Yavuz, 2019; Yıldizer et al., 2017) could ask the same questions about their overall mental state 20 years later too. Just like the physical follow-up questionnaire, the follow-up survey would be able to identify whether or not participation had helped or hurt their current mental state. Also, none of the mental health studies researched the past of the parents' mental health status as that might have affected the adolescents during the surveys as well. Of the four studies on academic achievement for adolescents (Badura et al., 2018; Burns et al., 2020; Caldarella et al., 2019; Paakkari et al., 2017), it would have been fitting

to see research done about adolescents whose grades went from unsatisfactory to satisfactory due to their participation in sports. Conversely, a research study about the adolescents participating in sports and their grades going from satisfactory to unsatisfactory would be beneficial as well.

Conclusion

This review searched to identify the positive and negative effects of sports participation on middle school and high school adolescents. Overall, sports participation appears to have a positive effect on adolescents when it comes to school and their academic achievement because of their participation. Regarding mental health issues, sports participation provides a stable force that helps lower such troubles as anxiety, depression, and stress in adolescents. Participation in sports provides a positive effect on adolescents within their overall experience that affects their enjoyment of sports, and in turn, helps their mental psyche and attitude. Overall, sports participation and physical health/activity also provides a positive effect on adolescents. By participating in sports, adolescents are able to increase their physical fitness levels, knowledge of physical education, and improve their health and well-being in general. In all, the current literature is quite positive for those who participate.

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