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**Participation in Physical Education and the Effect on Mental Health**

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Northwestern College

A Literature Review Presented

In Partial Fulfillment of the Requirements

For the Degree of Master Teacher

Dr. Theresa Pedersen

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**Abstract**

This literature review is an examination of the effects physical education has on students' mental health. The importance of youth's mental health is a critical topic. Physical activity is a large part of having good mental health. This literature review aims to provide insights into the effects physical activity and physical education have on students'/youth mental health. The mental health issue in the United States is higher than ever before and needs to be addressed. Researchers have determined physical activity is consistent with increased mental health in students. Regular physical activity, whether it is in a physical education class or on the students own, has been reported to reduce stress, anxiety, depression and increase self-esteem.

*Keywords:* Physical education, mental health, physical activity

**Physical Education Effects on Mental Health**

The importance of our youth's mental health is a critical topic which does not receive enough attention. Mental health issues are on the rise, in students of all ages. Currently, twenty percent of children experience severely debilitating mental health issues at some point in their lifetime (Alghadir, 2016). According to Alghadir's research, 13 percent of children between the ages of 8 to 13 have issues related to mental health. Mental health in students is a growing concern (Marsh, 2016; Alghadir, 2016; Pascoe, 2019; Smith, 2020). Students are struggling with their mental health at an unprecedented level. Studies suggest students' ability to learn is directly correlated to mental health (DeSocio, et al, 2004). If students struggle with mental health, it could impact how they function at school and at home. Emphasizing physical activity in youth has been shown to alleviate issues for some of these students who are struggling with mental health (Lubans et al, 2016).

Students who are not involved in physical education have a greater risk of having mental health issues. There has been strong evidence to suggest regular physical activity can improve a range of mental health outcomes (Leahy et al., 2020, p.2224). Physical activity helps improve mental health, whereas physical inactivity worsens mental health in people (Leahy et al., 2020). There is now fairly consistent evidence regular physical activity can have a positive effect upon the psychological well-being of children and young people (2006). The evidence is particularly strong with regards to children's self-esteem (Bailey, 2006).

With research done on physical activity having a positive effect on mental health, one would think there would be correlation with physical education. Sometimes the conditions physical education teachers set up in class create a negatively stressful situation for students

(Blankenship, 2007). This review will summarize research that looks at both positive and negative effects physical education has on the mental health of students. The objective of this literature review is to discuss research showing evidence for or against the importance of physical education on youth's mental health.

The purpose of this literature review is to provide information on the mental health of students involved in a physical education class and/or physical activity on their own. This review will also provide information on research from studies taking place on undergraduate students, the amount of time they spend doing physical activity, and the effect it has on their mental health. Some of the research will break down the effects physical activity has on different mental illnesses like anxiety, stress and depression. All of the articles used were found on DeWitt Library, Ebscohost or Google Scholar. The articles are all peer reviewed and current within the last ten years.

Physical activity improves the mental health of students by reducing anxiety, stress, depression and increasing self-esteem. There is strong evidence physical education greatly helps youth self-esteem (2006). Youth who have active habits will enjoy higher levels of physical and mental health, and students will have greater chances of carrying these habits over into adulthood (2006). Other associations with regular activity which have been reported include reduced stress, anxiety and depression (Bailey, 2006). Youth sport, individual or team, also develops psychosocial assets and reduces the risks of mental health problems in young people (Vella et al., 2017).

This literature review will start by analyzing the effects physical activity has on mental health. It will then analyze the effects physical education has on mental health. The research

that has been done of this topic, there are both positive and negative effects of physical education on mental health. The effect physical education has on students is highly dependent on how the teacher delivers the content (Smith, 2020). This literature review will end with the effects youth sports have on physical education. Youth sports are involved in this literature review because youth sports and physical education can be interchangeable (Smith, 2020) This literature review will be summarized by bringing all themes together.

### **Review of the Literature**

#### **Effects of Physical Activity on Mental Health**

Physical activity plays a major role in mental health. Mental health is defined as optimal personal functioning resulting in productive activities, fulfilling relationships with other people and the ability to adapt to change and to cope with adversity (Elbe, et al, 2019). Research by Checkrout (2019) found there is a correlation between the frequency of regular physical exercise and mental health. The connection being: the more one regularly exercises, the better the mental health of said individual will be. The research also found there is an optimal range for frequency and duration of physical exercise. This does not mean the more the better with exercise (Elbe et al., 2019). Meaning the more one exercises does not mean the better their mental health is. There can be a limit where if said individual exercises too much, it can have a negative effect on their mental health (Elbe et al., 2019). The research shows the mental health issues in students was lowest when individuals engaged in about 45 minutes of exercise three to five days per week (Elbe et al., 2019). Engaging in exercise for 45 minutes three to five days a week aligns with the recommendation from the World Health Organization suggesting 150 minutes per week of moderate to vigorous physical activity for adolescents (World Health

Organization, 2020). Additionally, Tyson and his team found something similar. The students who engaged in high levels of physical activity showed significantly better mental health (Tyson et al., 2010). Checkrout extends Tyson's research to say excessive exercising is often related to mental health issues like addiction and indicates only a sufficient frequency and volume of physical exercise is related to fewer days of bad mental health (Elbe, et al, 2019).

Adolescents who performed physical activity at a moderate intensity have a significantly lower probability of suffering from depressive symptoms such as fatigue, insomnia, feeling of hopelessness, and decreased appetite among others (Cecchini, et al, 2020). Cecchini and his partners did research on the connection between physical activity and previously stated depressive symptoms (2020). The 714 adolescents who participated in this study completed a questionnaire to examine the associations between physical activity levels and depressive symptoms. Results showed adolescents who performed physical activity from a moderate to high intensity level had a significantly lower probability of suffering from depressive symptoms (Cecchini et al., 2020). Additionally, Pascoe and his team found similar results. They found physical activity of varying intensities decreases depression symptoms (Pascoe et al., 2019). Physical activity reduces the risk of adolescent depression. In contrast, Johnston and partners disagreed. They found the students who participated in their study reported slightly higher depression symptoms at the end of the study compared to before they started the study. The students in this research participated in a 12-week study where they enrolled in a team sports class and a dance class (Johnston et al., 2020). Part of the reason the researchers thought the depression symptoms were higher was due to finishing the study during finals week, so academic stress was weighing on the students (Johnston et al., 2020).



Focusing specifically with how physical activity effects mental health, Tyson and his team researched the association between physical activity and depression and anxiety (Tyson, et al, 2010). According to Mental Health America, 9.7 percent of youth in the U.S. have severe major depression (Mental Health America, 2021). Tyson and his partners found in their research adolescents who engaged in high levels of physical activity showed significantly lower levels of anxiety and depression than the students who engaged in medium and low physical activity groups (2010). This is according to questionnaires given to said students. As physical activity increased, depression and anxiety decreased (Tyson, et al, 2010). Additionally, Leahy and her team also agreed with the fact physical activity decreases anxiety and depression. Leahy's team reviewed 22 studies and found there is strong evidence to suggest regular physical activity can improve a range of mental health outcomes like anxiety and depression (Leahy et al., 2020).

Alghahir and his team also did research on the effects of physical activity on depression symptoms in children and adolescents (2016). They studied biomarkers from saliva tests. The biomarkers tested in this research were cortisol, copper and serotonin (Alghahir et al., 2016). Alghahir and his team tested 180 students. Among the physically active participants, the reduction in depressive self-reporting test scores correlated with the increase of biomarkers. The higher depression scores were linked with lower physical activity scores and lower biomarker scores, which means lower cortisol and serotonin levels in their saliva (Alghadir et al., 2016). Most studies that have done research on the association between physical activity and lower levels of depression have had results indicating physical activity helps (Alghadir et al., 2016). This study Alghahir and his team completed, focused on why depressive symptoms

subside from physical activity. The cortisol, serotonin, and zinc levels are indicators of what helps improve depression (Alghadir et al., 2016). There are many different treatments for mental illness including medications, talk therapy, and non-drug modulators. Non-drug modulators simply means treating an illness without medication. Physical activity programs are considered non-drug modulators for improvement of physiological and psychological disorders (Alghadir et al., 2016, p.304). The frequency in physical activity may also contribute to increased prevalence of mental health disorders like anxiety and depression which emerge during late adolescence (Leahy et al., 2020). Ultimately, Aghadir and his teams research supports the idea that physical activity increases mental health in students.

Another study done by Sylvester and his partners looked at the association between physical activity and mental health in adolescence. The study examined if perceptions of three basic psychological needs (autonomy, competence and relatedness) and moderate to vigorous physical activity mediate the association between number of years participating in physical activity and mental health in adolescence (Sylvester et al., 2020). This study had 424 participants and was completed over 6 years. The study suggested level of autonomy, competence and relatedness experienced in physical activity contexts as well as moderate to vigorous physical activity explains the association between physical activity participation and mental health (Sylvester et al., 2020). This finding supported physical education teachers in minimizing mental health issues in youth. These results suggest developing strategies to encourage youth to engage and remain involved in physical activity, and physical activity enhances perception of autonomy, competence and relatedness (Sylvester et al., 2020). It has

been shown students benefit from having all three of these basic psychological needs if they wish to have optimal mental health (Sylvester et al., 2020).

Promoting a physically active lifestyle in youth aged 15 to 16, aids in reducing mental health issues (Kantomaa et al., 2007). Foundational research was done in 2007 where mental health was evaluated on physically active Finnish students. Kantomaa and team did research on Finnish adolescents and how their inactivity was associated with their mental health (2007). In this research, they tested 7001 adolescents who were 15 and 16 years old. The children had to fill out a questionnaire about their activity outside of school hours. They were also asked to fill out a self-report assessing their emotional and behavioral problems. The results showed being anxious and depressed was associated with being physically inactive in both genders (Kantomaa et al., 2007). Mental health problems were linked with being physically inactive in adolescence. Additionally, Cecchini and his team found similar results. Cecchini and his team examined the associations between physical activity levels, sedentary behaviors and depression symptoms in adolescent girls. They found the most sedentary group had the highest probability of suffering from depression (Cecchini et al., 2020). When promoting a physical active lifestyle to youth, social problems and internalizing syndromes should be taken into account (Kantomaa et al., 2007).

Youth mental health disorders are expected to be a leading cause of disability in developed countries by 2020 (Pascoe et al., 2019). Pascoe and his team did research about physical activity and exercise and how it correlated with youth mental health promotion (2019). They reviewed the scope and outcomes of controlled trials testing the effects of physical activity and exercise interventions across all mental health results for mental health promotion

and indicated prevention studies in young people (Pascoe, et al, 2019). There was evidence found physical activity and exercise interventions of varying intensities may decrease depression symptoms and some evidence moderate to vigorous intensity and light intensity reduce anxiety symptoms (Pascoe et al., 2019). Additionally, Andermo and her team found similar results from their study. They investigated the effects of interventions targeting school-related physical activity on mental health in children and adolescents (Andermo et al., 2020). They found school related physical activity interventions may reduce anxiety and increase positive mental health in children and adolescents (Andermo et al., 2020).

### **Positive Effects of Physical Education on Mental Health**

The positive impact physical education has on mental health has been well researched. For example, in the United Kingdom, the Association for Physical Education points to the range of health benefits of engaging in physical activity, including through physical education. Among these benefits are improvements in cardio-respiratory and musculoskeletal health, maintenance of healthy weight, enhancements in self-confidence and social skills, improvements in psychological and mental wellbeing, improvements in self-esteem and reduced anxiety and stress (Smith, 2020). In many schools, physical education teachers are being encouraged to address mental health, the wellbeing, and mental illness of their students (Kumar, 2017). Physical education benefits students in ways other classes don't, including increased mental health (Kumar, 2017). Physical education and sports play a vital role in educating youth regarding the importance of social values in their life (Kumar, 2017; Bailey, 2006; Checchini et al., 2020; Smith, 2020).

Advocates of physical education and sport have listed numerous benefits associated with participation in physical education and sports (Bailey, 2006). Foundational research was done in 2006 where Bailey researched the benefits and outcomes of physical education and sport in schools. Bailey completed a review which suggested physical education and sports, when presented appropriately, can support the development of social skills, social behaviors, self-esteem and school attitudes (Bailey, 2006). There is also fairly consistent evidence showing regular activity can have a positive effect upon the psychological well-being of children and young people. One of these positive effects being children's self-esteem improves with physical activity. Other associations improved by physical education and sport are reduced stress, anxiety and depression (Bailey, 2006). According to Bailey, if physical education and sport are presented in a positive way, it benefits the psychological health in young people and children (2006).

One important topic Bailey brought up in his research was not all children enjoy such activities, even when presented in an attractive way for students (2006). For example, many adolescent girls acquire a progressive disillusionment with certain aspects of physical education and sport and often completely disengage from participation as they move through secondary schooling (Bailey, 2006). Research shows when physical education and sport are presented in attractive ways and ways which are relevant, children of both genders enjoy the classes (Bailey, 2006). Additionally, Blankenship has had similar findings. Blankenship completed research about the stress process in physical education. His findings show when students have negative stress in physical education, it reduces the students enjoyment of exercising and destroys the students desire to physically active beyond high school (Blankenship, 2007). Blankenship lists

strategies teachers can take to reduce stress for students. The list includes: (a) create developmentally appropriate tasks, (b) teach by invitation, (c) teach games and sports using the game stages, (d) modify equipment, (e) arrange private practice sessions, (f) use stations, (g) maximize practice opportunities, (h) use minimum number of students necessary for a task (i) give every student a piece of equipment, (j) avoid lines, (k) use modified games, (l) and teach students relaxation techniques (Blankenship, 2007).

The quality of the physical education program effects how much students retain from it (Kohl, 2013). It can be positive experience if presented correctly, but it can also be a negative experience if not presented in an attractive way (Farren et al., 2018). Increasing physical knowledge in children may improve psychological well-being (Farren et al., 2018). A well-designed physical education curriculum provides students with social and emotional benefits (Kohl, 2013). Through his research, Kohl found physical education and physical activity experiences can increase children's self-confidence about being active and lead to continued participation in physical activity through adulthood (Kohl, 2013). Kohl also states poorly presented physical education programs increase the risk of mental health issues (Kohl, 2013). Negative teaching practices effect students long-term. Teaching procedures like isolating students to perform in front of class and having a captain pick teams are negative teaching practices (Kohl, 2013; Blankenship, 2007). Other researchers agree teachers are under an increased amount of pressure to be accountable for their practices, especially towards mental health (Reinke et al., 2011).

Young people are disproportionately affected by depression, anxiety and other mental health disorders. Approximately 20 percent of school-aged children have a diagnosable mental

health disorder (Kohl, 2013). Bostani and his team also conducted research about the correlation between mental health and academic performance in athletic and non-athletic students (2014). They found mental health affects academic performance on many levels, the higher the mental health of students is the better they perform in their academics (Bostani et al., 2014). Schools must support programs designed to improve mental health among the student population (Bostani et al., 2014). Providing adequate amounts of physical activity in a way that is inviting and safe for children of all ability levels is one simple way in which schools can contribute to student's mental health (Kohl, 2013). Kohl backs up data from other researchers, finding physical activity has most often been shown to reduce symptoms of depression and anxiety while also improving student's mood. Schools physical education programs need to be nonthreatening and geared toward creating a positive experience for children of all skill and fitness levels (Kohl, 2013). Ultimately, this supports the idea that physical education has a positive effect on mental health.

Promotion of healthy, active behaviors should start from early ages as behaviors learned in youth are more likely to endure (Cocca et al., 2020). Cocca and partners researched the effects of a game based physical education program on mental health in elementary school children (2020). The study consisted of 252 students between the ages of 10 and 12. The students had to partake in physical fitness tests and were asked to fill out mental health questionnaires. They split the participants into two groups. One group was only in game based physical education while the other group was in a traditional based physical education class. In both groups, the student's psychological condition at pre-test was very positive and did not show changes throughout the study. The study supported the positive effect of participating in

exercise games on the improvement of mental health, specifically on stress reduction (Cocca et al., 2020). Additionally, Sollerhed and his team (2008) found similar results in their foundational research. The study was designed to assess 132 students in Sweden on whether a school-based program with expanded physical education lessons was effective in increasing children's physical capacity (Sollerhed, 2008) The team found introducing physical activity, games, and/or sports at an early age has shown those habits will continue to endure into adulthood if introduced early enough (Sollerhed, 2008). It is assumed activity and fitness levels in childhood tend to track into adulthood (Sollerhed, 2008).

Childhood is a time period where rapid growth and development is characterized by neuronal plasticity, the formulation of self-concept, and the establishment of behavioral patterns to enhance or diminish mental health (Lubans et al., 2016). As such, physical activity is a critical intervention (Lubans et al., 2016). These interventions include any home, community or school based physical activity program (Lubans et al., 2016). According to The World Health Organization, the physical, psychological, and behavioral changes which take place during adolescence contribute to many mental health problems. Many mental health disorders first emerge in late childhood and early adolescence and may continue into adulthood (World Health Organization, 2017). Action is imperative to reduce the burden of mental health problems in future generations and to allow for the full development of vulnerable children and adolescents worldwide (World Health Organization, 2017, p.10). Bailey found in his research development of self-esteem is influenced by the student's adequacy to achieve and grow interest in the relationships with physical education and sport (Bailey, 2006).



A number of beneficial associations between physical education and mental health have been reported (Park et al., 2020). Park and his colleagues studied high school students in South Korea and how physical education participation predicts suicidal ideation and stress (2020). They found being involved in a physical education class for two or more days a week was significantly associated with lower suicidal ideation and lower stress (Park et al., 2020). The stress South Korean students are under is much higher than in the United States because of the academic pressure but physical education works as a stress reliever (Park et al., 2020). When implementing curriculum guidelines for physical education, schools should exercise caution to avoid performance stress on students (Park et al., 2020). This is why many schools now teach the process over product theory in physical education classes (Beagle et al., 2020). In addition to Park, Beagle and his team found something similar. Beagle and his team found components of a quality physical education program (2020). They listed the process over product theory and how the theory focuses on the student's performing an action or skill with the correct mechanics rather than which student has a better result (Beagle et al., 2020). Performing for a result isn't what most people want to do. They would much rather simply enjoy exercising (Beagle et al., 2020).

There is a clear need to increase participation in physical education (Park et al., 2020; Farren et al., 2018; Cecchini et al., 2020). Park and his colleagues' research suggest physical education is potentially an effective method to alleviate stress among high school students (2020). This research lines up with previous research done in the United States. The schools were successful in South Korea at implementing national curriculum guidelines for physical education had students participate in physical education for approximately 170 hours per year

(Park et al., 2020). Only 25 percent of schools have successfully implemented this curriculum (Park et al., 2020). With so many positive health effects coming from physical education in general, let alone on mental health, schools may start to reinforce initiatives to increase physical activity (Andermo et al., 2020).

### **Possible Negative Effects of Physical Education on Mental Health**

The overall number of students who experience high stress levels in physical education is low, but even one student is too many (Blankenship, 2007). Cardinal and his team had 293 students complete a survey about recollections from their childhood or youth physical education and sport experiences. The survey addressed topics such as, “have you ever been cut”, “have you ever been picked last for a team”, and “have you ever been on a team, but not played” (Bradley et al., 2013). Those who reported they had been picked last for a team exercised fewer times than students without this experience (Bradley et al., 2013). One participant stated physical education robbed him of physical activity for years by destroying his physical confidence (Bradley et al., 2013). All physical education teachers are now taught they cannot use the method of having captains pick teams due to the significant impact it can have on students, even into adulthood (Bradley et al., 2013). One poor experience of being chosen last for a team can have a lasting effect on “physical confidence” (Bradley et al., 2013).

Foundational research by Blankenship (2007) introduced the impact of stress during physical education and introduced the concept that a physical education teacher should take some simple steps to reduce stress in students. Reduced stress will enhance the chance to have a positive experience and greater chance of forming lifelong habits of physical activity (Blankenship, 2007). Additionally, Leisterer and his team researched students emotional

experience in physical education (2019). They interviewed 12 participants who were randomly selected from a physical education class (Leisterer et al., 2019). The results show both positive and negative emotions were found towards physical education (Leisterer et al., 2019). The negative emotions found were embarrassment, humiliation, fear, boredom, weakness and acceptance by peers (Leisterer et al., 2019). Physical education must inspire lifelong participation. Early positive experiences of play, games and physical activities should be prioritized for all so as to lay a foundation of knowledge, skills, attitudes and motivation necessary for the maintenance of lifelong participation in physical activity and sport (Leisterer et al., 2019; Blankenship, 2007; Bradley, 2013). These studies provide awareness into how a positive experience in physical education can have a positive impact on mental health and lifelong activity participation.

### **Positive Effects of Team Sports on Mental Health**

According to Johnston and her team there is notable relationship between team sports participation and reduced depression levels. There is also a relationship between physical activity and improved quality of sleep (Johnston et al., 2020). Team sports are described as when individuals sharing a common goal participate as a team while competing against an opposing team (Johnston et al., 2020). Participating in team sports could be one way to reduce stress, anxiety and depression (Johnston et al., 2020). Johnston conducted research on 327 college students enrolled in team sports and dance classes. One group participated in team sports, the other participated in aerobic dance. All took part in a 90-minute physical education class. They also filled out four different questionnaires pertaining to depression, anxiety, stress and sleep quality. After all of this was complete, both groups experienced an increase in anxiety

and stress. The researchers attributed this to finishing the questionnaires during finals week (Johnston et al., 2020). However, depression did decrease over the course of the study and sleep quality increased (Johnston et al., 2020). Johnston's study revealed some coping strategies for students to implement into their daily lifestyle to help reduce feelings of depression (2020). These coping strategies include playing team sports, having a social group and getting more sleep (Johnston et al., 2020). Additionally, Cocca and her team found similar results. They research about the effects game based physical education has on physical fitness and psychological health. They found, after testing 252 students, engaging in sports in childhood is associated with lower risk of developing mental health issues in adulthood (Cocca et al., 2020). Ultimately these studies provide insight into how sports may have a positive impact on mental health.

Athletes who specialize on one sport early in life are usually performance-driven (McFadden et al., 2016). They are expected to strive for perfection and often times their efforts are not rewarded along the way. The lack of positive reinforcement makes them feel as though they are inadequate (McFadden et al., 2016). McFadden and colleagues did this study on 61 male hockey players, where they investigated the psychological effects of sport specialization. Their results showed the athletes had a high level of mental health and low level of mental illness (McFadden et al., 2016). McFadden and his team, believe this may be in part because over half the participants played more than one sport, showing the hockey players were not specializing (2016). Specializing in sports limits what the child develops into. They are putting all their efforts into one sport and when it doesn't work out, they will feel like they failed (McFadden et al., 2016). However, Malm and his team also argued early specialization to a

specific sport is a common phenomenon and there is no scientific evidence early specialization would have positive impact, neither for health nor for performance later in life (Malm et al., 2019). According to Malm and his team, specialization can lead to injury, over training, increased psychological stress and reduced training motivation (Malm et al., 2019). LaPrade and his team also agree with Malm and his colleagues, finding early sport specialization is not a requirement for success at the highest levels of competition and is believed to be unhealthy physically and mentally (2016).

When coaches are educated on mental health, their intentions to offer support to youth with mental health problems increase (Breslin et al., 2017). Coaches offer support for students as they directly impact students daily. Breslin and his team researched the effects a mental health awareness program has on sports coach's knowledge and intentions to offer support to athletes who experience mental health problems (2017). They found coaches' who are educated on mental health prevent anxiety, depression and lack of self-esteem in their athletes because they know how to handle and approach an athlete showing signs (Breslin et al., 2017). They may also prevent mental health issues because of the knowledge they would have gained through this education (Breslin et al., 2017). Sports have been shown to be a useful medium to tackle mental health as it provides a natural environment for an established social network (Breslin et al., 2017). Additionally, Breslin found similar results to that. He performed research on promoting mental health awareness in sport clubs. He found coaches' knowledge of mental health increased as did their intentions to offer support to someone with a mental health problem (Breslin et al., 2017). These studies have begun to provide insight into how coaches can affect students' mental health in a positive way.

Participating in school sports during adolescence can have a lasting effect into early adulthood (Jewett et al., 2014). Jewett and her team did research with 858 adolescents who participated in school sports. The study lasted five years, participants were asked to give self-reports on their depressive symptoms, levels of stress and self-rated mental health (Jewett et al., 2014). Involvement in school sport during adolescence was a statistically significant predictor of lower depression symptoms, lower perceived stress, and higher self-rated mental health in young adulthood (Jewett et al., 2014). School sport participation may protect against poor mental health in early adulthood (Jewett, et al, 2014). Additionally, Guddal and her team found similar results. Guddal and her team performed research on the associations with mental health and sport participation (2019). Guddal and her team had 7619 students, from the ages of 13 to 19 involved in their research(2019). Physically active adolescents and participants in team sports had higher self-esteem and life satisfaction (Guddal et al., 2019). A high physical activity level was favorably associated with various dimensions of mental health, especially for adolescents in senior high school. Team sport participation may have a positive impact on mental health and should, therefore, be encouraged (Guddal et al., 2019, p.1). Ultimately, this supports the idea that team sports have a positive effect on mental health of adolescents.

Physical activity and sport have long term implications for both physical health and psychological well-being. According to Easterlin and her team, participation in team sports is associated with better adult mental health outcomes among individuals exposed to adverse childhood experiences (2019). Additionally, Greenleaf and her team (2009) found similar results about the relationship of high school sport participation to psychological well-being. They researched 260 females for one semester. The females were asked to respond to

questionnaires assessing their current body image, physical competence and activity levels (Greenleaf et al., 2009). The females participated in sports in high school and reported moderately positive body image and physical competence. Being involved in sports, developed these females body image for themselves (Greenleaf et al., 2009). When girls develop positive body image, feelings of physical competence and perceptions of instrumentality through high school sport, these factors relate positively to their continued involvement in physical activity and their psychological well-being (Greenleaf et al., 2009, p.722).

### **Possible Negative Effects of Team Sports on Mental Health**

Sports can have both positive and negative effects on health (Malm et al., 2019). The role of sport in society has become increasingly more important over the years (Malm et al., 2019). Malm and his team researched the positive and negative effects of sports and physical activity on adolescents (2019). Negative effects include the risk of failure leading to poor mental health, risk of injury, eating disorders and burnout (Malm et al., 2019). Negative aspects of team sports are more common in the elite level of sports, like college and professional sports, due to increased pressure to perform at a certain level (Malm et al., 2019).

One negative effect sports have on mental health, which Malm and his team found, was when athletes have the goal of winning at all costs (2019). This is especially true for children and adolescents, as early engagement in sports increase the risk of injury, promotes one dimensional functional development, leading to over training, risks psychosocial disorders and has the risk of psychological abuse (Malm et al., 2019). For adolescents, there should be a great importance on sport's goal of healthy performance development (Malm et al., 2019).

Coping with stress can be an element of being involved in sports as an adolescent. Fear of failure is one stressor with which many youth struggle. From the study Sagar and his team researched, fear of failure affected the athlete's well-being, interpersonal behavior, sport performance and schoolwork (Sagar et al., 2009). Adolescents who battle with fear of failure, struggle with being afraid of a poor performance and negative consequences due to their poor performance (Sagar et al., 2019). Athletes who do not possess effective coping skills to deal with such situations are likely to experience poor performance, negative affect and may eventually drop out of sports (Sagar et al., 2019). Coping is a dynamic process involving a person's constantly changing cognitive and behavioral efforts to manage external and internal demands that are appraised as stressful (Sagar et al., 2019).

### **Conclusion**

The importance of physical activity and physical education on the mental health in adolescents has come to the forefront in recent years. Researchers have determined physical activity is consistent with increased mental health in students (Cocca, 2020, Elbe, 2019, Sylvester, 2020). Physical activity improves the mental health of students by reducing anxiety, stress, depression and increasing self-esteem (Bailey, 2006).

The findings of the literature review revealed physical education helps to increase mental health in students when presented in the correct way. A positive effect was seen across all age groups, when physical education was presented in an appealing form. From traditional physical education classes, to game-based education classes, they had a positive effect of the student's mental health.



Regular physical activity, whether it is in a physical education class or on the students own, has been reported to reduce stress, anxiety, depression and increase self-esteem. When youth are involved in sports and have a quality experience, their mental health also improves. With regular physical activity, improving mental health in youth will also carry over into adulthood. Habits formed in adolescents follow you into adulthood.

Limitations were discovered when conducting this literature review. One limitation was a majority of research conducted on mental health was completed on adults or graduate students. This limited the amount of research on adolescent physical education classes. Another limitation of this literature review was the lack of literature about the negative effects team sports have on the mental health of adolescents and youth.

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