

Mini Review

Significance of High School Sports during the COVID-19 Pandemic

Ashley Wang*

Simon G. Atkins Academic & Technology High School, High school in Winston-Salem, USA

*Corresponding author

Ashley Wang, Junior student, Simon G. Atkins Academic & Technology High School, USA, 3605 Old Greensboro Rd, Winston-Salem, NC 27101, USA, Tel: 336-757-6532; Email: ashleywangcoco@gmail.com

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Abstract

Sports is an important part of school life for high school students. Students benefit from school sports in several aspects, including improving their physical and mental health, building up leadership skills and teamwork, time management, developing accountability and responsibility, and improving academic performance. However, school sports are often considered for elimination due to funding cuts from federal, state, and local sources. They have been severely limited in the past two years during the COVID-19 pandemic, which has caused and continues to cause negative effects on the lives of high school students. Two of the most important negative consequences of the COVID-19 pandemic in high school students were mental health disorders and decreased academic performance, both of which could be combated by participation in school sports. This article discusses the impact of the COVID-19 pandemic and sports on the mental health and academic performance of high school students, thereby providing evidence for high school policymakers to emphasize student sports during the COVID-19 pandemic.

Keywords

- School sports
- Mental health
- Academic performance
- COVID-19 pandemic

INTRODUCTION

Sports have a significant impact on the culture of American life and play an important role in high school education. According to the Centers for Disease Control and Prevention's 1991–2019 High School Youth Risk Behavior Survey data, approximately 57% of high school students participated in at least one school or community sport in a school year. The first three most popular sports in girls' high schools were track and field, volleyball, and basketball; whereas the top three most popular sports in boys' high schools were football, track and field, and basketball (<https://www.nfhs.org>).

Sports benefit students not only by decreasing the probabilities of obesity, cardiovascular disorder, and asthma among school-aged youth, but they also help to build up students' character, loyalty, teamwork, and skills in dealing with pressure and challenges, among others. However, despite the benefits of high school sports for students, the importance of school-sponsored sports has been an area of debate due to the budget cuts from the federal and local educational systems [1]. Since the primary purpose of school is learning and academic achievements, extracurricular activities and sports are usually the first fields to be cut off if any budget cut happens. Data from 2019 from the National Federation of State High School Associations (NFHS.org) showed that participation in high school sports registered the first decline in 30 years. This decline has been accelerated in the past two years due to the COVID-19 pandemic.

Since the beginning of 2020, the COVID-19 pandemic has caused and continues to cause serious disturbances in daily life worldwide. Student life in high school has also been dramatically changed by the restrictive measures of the pandemic, including the requirement of wearing masks, social distancing, school

closures, and online learning. Moreover, school-sponsored sports have been completely stopped or were severely limited at the beginning of the pandemic, and currently, a few schools are still affected by the restrictive measures.

High school sports have been limited due to budget cuts and the COVID-19 pandemic. However, they play critical roles in high school student life, and especially during the pandemic, sports would have helped to mitigate the negative effects of the COVID-19 pandemic on high school students. Education policymakers, teachers, students, and parents might need to re-evaluate and emphasize the importance of sports in high school students' lives during the pandemic. This article will mainly discuss the role played by sports on two important aspects of high-school students, i.e., mental health and academic performance, and how they were influenced by the COVID-19 pandemic.

Influence of the COVID-19 pandemic on the mental health of high school students

One of the most prominent consequences of the COVID-19 pandemic and the related policy changes, including school closure and social isolation, on high school students were mental health problems, which mainly included stress-related disorders, depression, anxiety, and substance abuse [2]. Data from the 2021 Adolescent Behaviors and Experiences Survey, an online survey of a nationally representative sample of U.S. public and private high school students, showed that 37.1% of the students experienced poor mental health during the pandemic, 19.9% seriously considered attempting suicide, and 9% attempted suicide during the pandemic [3]. A study from Canada on approximately two thousands 12- to 18-year-old students also revealed that the student stress levels were above critical thresholds of 25% and females and older adolescents (aged 15–18 years) generally

reported higher stress indicators compared to males and younger (aged 12–14 years) adolescents [4]. Specifically, for the high school student-athletes, a study reported that self-reported anxiety and depression in female athletes were higher than those in male athletes and were higher in grade 12 students compared to lower grades [5].

Mental health problems in students during the COVID-19 pandemic might be caused by multiple reasons. First, the quarantine increased isolation and decreased social connections; the common issues affecting the mental health of adolescents in the face of the pandemic were trauma, uncertainty, fear of getting infected, economic hardship in families and family loss or illness, and worries about the future [6,7]. Second, the students spent more time on social media during school closure and online education. A European study reported that >85% of students spent more time on social media during the pandemic compared with pre-pandemic years [8]. The misinformation on social media might have also caused anxiety, the feeling of powerlessness, and depression. Third, increased screen time has often been associated with reduced sleep quality and sedentary habits, which have been associated with mental health problems [9,10].

The mental benefits of sports for high school students

Physical activity and social connection are important determinants of mental health [11–14]. Studies have demonstrated that any kind of physical activity has been positively associated with mental health in youth [6]. Furthermore, sports activities improved the capability of high school students to manage emotions and understand their abilities and limitations [15]. Moreover, researchers have reported that youth who participated in team sports exhibited better mental health scores than youth who were engaged in individual sports [12]. However, the consequences of COVID-19 might have been more difficult for team sports athletes. In this regard, McGuine et al. [5] found that during the first few months of the COVID-19 pandemic, team sports athletes self-reported to be more anxious and exhibited depressive symptoms compared to individual sports athletes. This might be because team sports athletes needed more social connection and team support compared to individual sports athletes.

Sports played an important role in improving the mental health of high school students during the COVID-19 pandemic. An online survey conducted in Wisconsin High School in 2020 during the COVID-19 pandemic showed that student-athletes (PLY), compared to non-athletes (DNP), were less likely to report moderate to severe symptoms of anxiety (PLY = 6.6%; DNP = 44.1%) and depression (PLY = 18.2%; DNP = 40.4%). Student-athletes also exhibited higher (better) Pediatric Functional Activity Brief Scale scores and higher (better) Pediatric Quality of Life Inventory total scores than non-athletic students [16,17].

Regarding the mechanism of how sports improve mental health in high school students, it is considered that the game itself might not benefit the mental health of high school students [18]. but the skills that students learn from participating in sports to enhance their performance can be used to succeed in other areas of life, including mental health. These skills and abilities learned from sports include emotion management, working under

pressure, setting goals and reasonable practice plans, solving problems, facing failure, working with teams, and inculcating communication skills. These principles learned through participating in sports immensely benefit the mental health of high school students, especially during the COVID-19 pandemic.

The effects of the pandemic on the academic performance of high school students

The COVID-19 pandemic resulted in a sudden shutdown of schools in 2020, affecting more than 1.6 billion students in approximately 190 countries. The restrictive measures not only affected their emotional resilience and mental health but also their academic performance. Teachers reported that students presented academic gaps and difficulties in mathematics and reading compared to typical years [19] and lower performance on national tests [10,20–23]. Studies on adolescent students have shown that grade point average (GPA) significantly decreased on average from the 2019–2020 to 2020–2021 school years, especially for males and students with attention-deficit/hyperactivity disorder (ADHD) [24].

Multiple reasons might result in the decreased academic performance of high school students during the pandemic. Most schools had changed student learning to online or virtual mode. A few students might not have been able to rapidly adapt to this new homeschooling situation. The higher stress and anxiety [20,21] lower sleep quality [10], and a general decrease in students' well-being [22,23] during the pandemic also affected their academic performance. Furthermore, during the pandemic, students had higher rates of absenteeism, quarantines, violence, and misbehavior compared to the pre-pandemic years, and schools faced severe staff shortages. All these reasons might have lowered the academic performance of students compared to previous years. The long-term effects of this pandemic on students' performance are still unclear and might need several years to unfold.

The effects of sports on the academic achievements of high school students

Several studies with large sample sizes that compared the GPAs and attendance of participants and non-participants in any school-sponsored activity in high schools reported similar results, which showed that participants had significantly higher GPAs and significantly lower absenteeism than the non-participants [25]. Specifically for school sports, positive correlations have been reported between participation in sports and the academic performance of high school students [26–28]. Students who were more involved in high school sports exhibited significantly higher GPAs and fewer discipline problems in school compared to those who did not participate in sports [29–31].

Lumpkin et al. [25], reported that high school athletes received higher grades, graduated at a higher rate, dropped out of school less frequently, and scored higher on state assessments than non-athletes. Moreover, the differences between athletes and non-athletes have been found for both males and females across all academic performance measures; the differences between athletes and non-athletes regarding GPA and continuing school were higher for females than for male students [25].

Although several studies have indicated the association between participation in high school sports and academic performance, participating in sports may not always result in improved academic performance. Most of these studies have only analyzed the association or correlation between sports participation and academic performance, which showed a positive relationship but did not focus on the cause and consequences of the conclusion. A random assignment design needs to be used in future studies to conclude a causal statement on whether participation in school sports improves academic performance. In contrast, a few studies did not report an association between participation in high school sports and high grades. For example, Lueptow et al. [32], investigated the relationship between athletics and academic achievement among 3,461 seniors in 20 public high schools and found no differences in grades between athletes and non-athletes during their high school years. Tremblay et al. [33], even reported a negative relationship between sports participation and standardized test scores. A few parents claimed that students who participated in sports spent plenty of time and energy on training and meeting and thus dedicated less time and energy to their academic work.

Several reasons might be responsible for the different results regarding the relationship between participation in school sports and the academic performance of high school students. For example, the different study designs, small sample sizes, and the regions where the studies were conducted might have affected the results. One of the important biases in the studies illustrating the benefits of sports on academic performance indicated that the basic level of academic performance of students who participated in school sports, i.e., at the beginning of the sports, was already better than the students who did not participate. In many high schools, students are required to maintain a certain level of academic achievement to participate in school sports. The three most commonly used academic eligibility standards include pass-to-play, a minimum GPA, and a requirement that allows only a specified number of failing grades [34]. These academic eligibility requirements for student participation in high school sports can give a “false” result while investigating how school sports affect academic performance.

A few studies provided better evidence of whether school sports have beneficial effects on academic performance. Rees et al. analyzed the data from the National Longitudinal Study of Adolescent Health using a variety of statistical techniques designed to distinguish the cause and consequence between school sports and academic performance and found limited evidence to support that sports participation resulted in enhanced academic performance [35]. Eccles et al. [36], conducted a longitudinal study, which began with sixth graders and followed them through the 12th grade and six years after high school. The results showed that sports participation predicted positive educational and occupational outcomes and low levels of social isolation, but also high rates of drinking. Although the social network of those who participated in school sports reported some risky behaviors, the studies emphasized that sports participation was linked to more positive and long-term effects than negative ones.

The positive effects of sports on students' school performance

Although there is no clear evidence demonstrating that participating in high school sports can improve academic performance, including GPA and standardized test scores, evidence suggests that school sports benefit students in several aspects. For example, previous studies [37-40] showed that high school students who participated in school sports exhibited significantly lower dropout rates compared to students who did not participate in school sports. The involvement in extracurricular activities, including sports, developed social networks, increased engagement within schools and enhanced the feeling of belonging, which might help to reduce the school dropout rate [37,41]. In other words, social integration with peers on a team might significantly reduce the athletes' likelihood of dropping out of school [42].

School sports may reflect a deeper commitment by students to comply with school rules and adhere to basic values. The increased disciplined behavior may result in increased effort and improved academic performance.

Sports may also help students' school performance by improving the following skills

problem-solving skills, focus and concentration, skills for working under pressure, team and socialization skills, and competitiveness. Furthermore, high school athletes might have better time management skills, spend more time doing homework, and exhibit a more positive attitude towards school than non-athletes [37].

SUMMARY

Sporting activities are a key factor in promoting a healthy lifestyle in high school students who learn social and cognitive skills via sports, thereby enhancing their academic ambition to excel in future academic endeavors. Participation in school sports can thus help students imbibe discipline, responsibility, respect, teamwork, goal-setting, organization, and self-confidence. These lessons and skills can be transferred to their academic performance, which can help them succeed in life, regardless of the career path they choose.

Despite the potential benefits of sports in high school students' lives, the educational system in America has experienced funding cuts from federal, state, and local sources, and school sports have often been considered for elimination to reduce the cost of educating high school students. Moreover, high school sports have been drastically limited in the past two years during the COVID-19 pandemic. However, the COVID-19 pandemic has caused and continues to cause negative effects on high school students, including increased mental health disorders and decreased academic performance, which have been reflected in their GPA and standardized test scores. As discussed in this article, school sports have a significant role in maintaining good mental health and improving the academic performance of high school students. Therefore, high school policymakers should highly emphasize sports during the COVID-19 pandemic. Furthermore, academically deficient students must be given opportunities to participate in extracurricular activities, including sports, as

restricting their participation in extracurricular activities could further contribute to their academic difficulties.

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