

## PHYSICAL EDUCATION AND ITS INFLUENCE ON STUDENT MENTAL HEALTH

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### Abstract

Many children and adolescents are in poor physical and mental health due to their sedentary behaviors. The COVID-19 pandemic which resulted in school closures and compounded by social and economic issues at home, have contributed to an increase in mental health issues in children and adolescents. Many studies show a positive relationship between increased physical activity and improved mental health. In 2021, 80.4% of Texas youth failed to meet the recommended amount of physical activity of 60 minutes per day which has led to an increase of mental health issues. Physical education (PE) in schools are well positioned to provide the physical activity that students require as well as help students develop personal, behavioral and social skills. These skills will assist students in developing a sense of personal belonging, which counteracts the feelings of anxiety and depression, and help to create and maintain positive relationships. The primary focus on aiding students in learning and preserving their mental well-being lies in providing comprehensive training and support for PE teachers, alongside integrating mental health literacy throughout the PE curriculum. Equally crucial is the incorporation of mental health literacy education for pre-service physical education teachers, empowering them to identify and assist with mental health concerns within educational settings.

*Keywords: adolescents, COVID-19, mental health, physical activity, physical education, pre-service teachers*

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### Introduction

Physical education (PE) is positioned as the ideal discipline for addressing the numerous health issues affecting adolescents today. Physical inactivity is globally recognized as one of the primary risk factors for death, increasing the incidence of cardiovascular disease, cancer, and diabetes (World Health Organization, 2018). Ensuring students receive quality physical activity often falls on the shoulders of physical educators. Research shows that PE, as a subject area, can have a positive impact on a student's mental health as well. Children and adolescents are increasingly experiencing poor physical and mental health because of their current lifestyles, characterized by an increase in sedentary behaviors (Triaca et al., 2019). In a study supported by the U.S. Department of Health and Human Services, it was reported that between 2016 and 2020, cases of anxiety for children aged 3-17 increased by 29%, along with a 27% increase in cases of depression (Lebrun-Harris et al., 2022). In Canada, a 2020 study conducted at SickKids Hospital in Toronto concluded that as many as 70.2% of students aged 2-18 experienced a

deterioration in their mental health, with symptoms of depression and anxiety being most prominent (Cost et al., 2021). With the rise of student mental health issues, it is important to implement interventions to mitigate the additional mental health effects caused by the COVID-19 pandemic. Schools connect with all children over a long period of time making them a perfect site for long-term interventions to develop and strengthen student mental health (Ryan, 2020). One approach could involve introducing mental health education in the PE curriculum. Furthermore, it will be vital to equip pre-service teachers (PSTs) with knowledge of mental health literacy, enabling them to recognize and effectively manage mental health issues as they embark on their teaching careers.

### **Physical Activity and its Impact on Mental Health**

Physical activity plays a major role in maintaining positive mental health. Mental health is defined as an “individual’s emotional, cognitive, and social health, including the way an individual develops and maintains relationships and their capacity to cope with life’s stressors” (Olive et al., 2019, p. 1332). Adolescence is typically the time when mental health issues develop, with “the average age of onset for anxiety disorders being 11 years and 11-13 years for depressive disorders” (Andermo et al., 2020, p. 23). There is research that participating in regular physical activity in adolescence reduces the probability of presenting episodes of depression and anxiety. In a study conducted with adolescent girls aged 12-13, it was found that students who were physically active for more minutes per week than sedentary students, were 4.5 times less likely to report depressive symptoms compared to their less active counterparts (Cecchini et al., 2020). The results of the Cecchini et al. (2020) study *did not* vary between male and female students pointing to physical activities’ importance in depressive symptom reduction, as well as a reduction in anxiety, loneliness, anti-social behavior, emotional problems, and hyperactivity (Triaca et al., 2019). Research shows that mental health issues in students are lowest when individuals engage in a minimum of 45 minutes of moderate to vigorous exercise three to five days a week (Elbe et al., 2019) which is in line with the recommendations made by the World Health Organization (WHO). The U.S Department of Health and Human Services recommends that youth between 6-17 years of age get 60 minutes of physical activity every day for optimal health and fitness. In 2021, 80.4% of Texas youth failed to meet this recommended amount of physical activity (Michael & Susan Dell Center for Healthy Living, 2021). It has been shown that physically active students have higher self-esteem, a more positive body image, and better cognitive functioning (Olive et al., 2019). Andermo et al. (2019) also noted higher feelings of self-worth and the effect was stronger when the participation in physical activity took place in a school-based setting.

For many students, physical education class is the time where they receive most, if not all, of their physical activity (Bailey, 2006). This makes PE the ideal venue within schools to address the issue of student mental health. Increasing student access to quality PE programs is a low-cost public health measure that will increase youth participation in physical activity (Triaca et al., 2019), as well as reduce some of the negative effects left behind from the COVID-19 pandemic on student mental health.

Physical educators are tasked with ensuring that they teach their students the cognitive and physical skills needed to lead a healthy, active lifestyle. Unfortunately, due to increasingly sedentary lifestyles paired with the social isolation caused by the COVID-19 pandemic, the mental health of adolescents around the world has been negatively impacted. The health behaviors practiced in adolescents have a direct effect on mental and physical health into adulthood and beyond. A study conducted by Wu et al. (2017) showed the number of students between the ages of 10 to 18 diagnosed with a mental health

disorder was significantly higher among students with less variety in their diets, and among students who reported less physical activity and more time using computers and video games. These findings suggest that proper diet and an active lifestyle in adolescents can positively influence mental health and implies that successful school health programs targeting adolescents' diets and physical activity will contribute to the reduction of mental health disorders later in life. Without a change to the current curriculum and instruction practices in school based physical education programs, adolescents will not have the requisite skills to live healthy and active lives into adulthood. Elgaddal et al. (2022) notes that only 24.2% of adults over the age of 18 in the U.S. are currently meeting the physical activity guidelines for aerobic and muscle-strengthening activities. By shifting the PE curriculum towards young people's future health and well-being, more specifically, towards their current and future participation in physical activity, we will not only see more physically active adults, but an increase in positive mental health development (Penney & Jess, 2004).

### **Findings Ways to Engage Youth in Physical Activity**

As adolescents are spending more time on computers and mobile devices and placing less emphasis on their personal physical activity, how can physical educators increase student engagement, make learning more meaningful and relevant, and give adolescents the skills to be active into adulthood? Some adults believe that they lack the basic confidence and skills needed to walk into a gym or fitness class without feeling inadequate or self-conscious, further limiting their access to physical activity opportunities (Penney & Jess, 2004) and the subsequent positive effect on their personal mental health. Physical educators can reduce this feeling by including activities and preparing engaging lessons that focus on the development of motor skill competence in their students. Ennis (2011) states that, "skillful individuals are more likely to participate in more diverse forms of physical activity, persist longer, and engage in higher levels of moderate to vigorous physical activity" (p. 7). Participation in activities at the moderate to vigorous level has shown to reduce depressive symptoms at a higher rate than lower-intensity activities (Cecchini et al., 2020). If students do not reach a critical threshold of motor skill competence, they could drop out of participating in physical activities, and be unwilling to participate in physically active pursuits later on in life (Ennis, 2011). Increased student skillfulness can also lead to more positive perceived competence with one's own ability. If an individual does not feel competent in a movement skill or specific physical activity, they are less likely to try and therefore, will not feel success (Ennis). Students in PE classes that emphasized self-improvement, rather than winning or outperforming others, have higher levels of perceived competence (Ennis). By creating a PE program that contributes to the development of *all* students' motor competence, promotes individual success, and fosters positive experiences, students will be more likely to lead physically active lifestyles after they have left their formal education within the public school system.

### **The Real Mental Health Challenges of Youth Today**

Because of the ongoing mental health crisis, and the related social and economic issues that are present, more students are facing adverse childhood experiences in their home lives than at any other time previously. Adverse childhood experiences include physical or emotional abuse and neglect, sexual abuse, domestic abuse, exposure to household substance issues, mental illness, and parental separation (Easterlin et al., 2019). Students with adverse childhood experiences are more likely to have physical and mental health problems (Easterlin) and the number of students facing these issues continues to rise. Prior to the pandemic, roughly one quarter of students experienced two or more adverse childhood experiences. This

number has risen due to the increase in parental mental health challenges and substance use problems and because of school closures, social isolation, and income insecurity (Bryant, Oo & Damien, 2020). Despite the increased risk of anxiety and depression associated with adverse childhood experiences, physical activity within a school setting was *significantly* associated with school connectedness, positive self-esteem, feelings of social acceptance, and improved adult mental health (Easterlin et al., 2019).

Physical Education class is more than just a space for students to be physically active. PE helps children develop respect for their bodies, develop an understanding of the role that physical activity plays in their health, positively enhances self-esteem, increases social interactions, and cognitive development is heightened (Bailey, 2006). A further goal of PE is to help students develop the personal, behavioral, and social skills needed to promote a sense of personal belonging (Olive et al., 2019). Mental health is more than just the absence of anxiety and depression, it also encompasses one's social health and ability to create and maintain positive relationships (Olive et al.). Numerous studies have shown that appropriately structured activities in PE classes contribute to the development of appropriate social behaviors, and can combat anti-social behaviors in youth (Bailey, 2006). These factors can play an important role in the prevention of loneliness and decrease instances of social isolation (Triaca et al., 2019). For some students, the social environment created in PE classes contributes to a feeling of exclusion. When taught by a trained specialist, PE has the potential to be more inclusive, as a variety of students from different social and economic backgrounds come together, offering a sense of belonging, and community (Bailey, 2006).

While increased access to physical education is important for all students, these programs need to be led by qualified PE specialists. Generalist teachers tasked with teaching PE face many barriers when it comes to offering quality programming. These teachers can lack confidence, motivation, and are unlikely to be skilled in quality physical activity instruction (Olive et al., 2019). PE can have the potential to negatively impact a student's mental health when taught by a generalist (Smith, 2020). Generalists tend to use fitness testing or performative-based activities can be embarrassing and shaming for young people and can be detrimental to the confidence of students (Smith, 2020). When PE is taught by a trained specialist who do not focus on increasing fitness or reducing obesity, research shows a reduction in body dissatisfaction in girls, and a decrease in depressive symptoms in boys (Olive et al., 2019).

### **Rethinking Curriculum and its Potential Influence on Students**

As the percentage of students dealing with negative mental health issues increases, more responsibility has been placed on physical educators. While physical educators are being tasked with more responsibility when it comes to mental health education, few have the subject knowledge or confidence to teach this sensitive yet important topic. Morrison (2013) states that the role of the school has been regarded as an important environment for promoting the psychological wellness and resilience of children and youth, yet the majority of teachers have received little to no training in how to discuss such important and sensitive topics. Graham et al. (2011) noted that only 34% of teachers report possessing the skills to discuss mental health, while the majority of educators had received no mental health training or professional development (Ryan, 2020). For mental health education to improve there needs to be a change at both the school, and curricular levels and potentially at the level of teacher training in post-secondary environments.

Regarding the curriculum, there needs to be more of a focus placed on integrating "Mental Health Literacy" (MHL) within all PE curricula. As schools are seen as the environment where literacy and

numeracy are naturally taught, the integration of MHL into school-based health and PE curriculum seems fitting. MHL is described as a state of wellbeing in which the individual realizes his or her potential, can cope with the normal stresses of life, can work productively and fruitfully, and can positively contribute to their community (Ryan, 2020). Currently, many adults and youth misunderstand mental health and mental illness. By integrating MHL into school curricula, both students and teachers can better identify, understand, and respond to mental illnesses, while lessening stigma and increasing help-seeking behaviors (Ryan). MHL is a basis for the prevention of mental health issues in students and supports the identification, management, and prevention of mental health issues (Ryan). Physical educators are well positioned to help in the monitoring and identification of students' mental well-being since they work with students in many challenging situations and environments. Supporting and identifying students' mental health poses a significant challenge. Numerous resources have been developed to assist PE teachers in integrating MHL into their programming, including online resources available at SHAPE America, Substance Abuse and Mental Health Services Administration and PHE Canada. However, without proper professional development, many of these valuable resources remain underutilized. At the school level, additional resources need to be given to teachers and administrators for professional development for mental health as it is shown that increasing educator understanding of MHL lessens stigma and creates a more caring school environment (Ryan).

### **Mental Health Literacy for Pre-service Teachers**

Texas is one of the seven states in the U.S. that require pre-service teachers to acquire skills for conducting strategic mental health intervention with students (Brown et al., 2019). This requirement is evident in the Texas Educator Certification Examination Framework for Physical Education, which assesses PSTs on this competence through the EC-12 exam (Texas Education Agency, 2021). It is crucial to prioritize mental health literacy among PSTs to ensure their readiness in handling mental health situations during their field placements or the early stages of their careers. Subramaniam and Wuest (2021) emphasize the necessity for a paradigm shift within Physical Education Teacher Education (PETE) programs, particularly in the post-COVID-19 era, as these programs are perceived as inadequately equipped to address the prevalent mental health challenges in schools.

The way MHL material is disseminated as part of the PETE program is equally vital when considering how this information may be retained by PSTs. The traditional lecture method is not the ideal way to teach MHL as it is teacher-centered and a passive teaching method. Active learning pedagogies such as flipped learning, blended learning and simulation are instrumental in enabling students to construct knowledge actively, fostering connections to real-life experiences (Calderón et al. 2020).

Flipped learning (FL) is a teaching approach where students learn the foundational content outside of class, usually through videos or online resources, and then engage in active learning activities during class time. These activities are designed to be student-centered, encouraging students to apply and reflect on the knowledge they acquire outside of class. Østerlie et al. (2023) reviewed 16 studies on the use of FL in physical education (PE) and found that FL offers several benefits over the traditional lecture method such as better student interactions and increasing student motivation for learning. A MHL course applying a FL course structure would allow the instructor to use in-class time to foster critical thinking, exploring practical applications and promoting discussions on mental health topics in class. However, it is important to note that Østerlie et al. (2023) did not review any studies on the use of FL in courses on MHL.

Blended learning also allows for students to shape their own learning and differs slightly from flipped learning in that it combines traditional in-person lectures with the integration of online learning activities, creating a hybrid learning model. Calderón et al. (2021) examined the implementation of a blended learning approach in a 12-week PE course on philosophy, advocacy and sociological concepts in PE. The course was divided into four blocks of three weeks each and incorporated various components such as in-person lectures, live online discussions, recorded lectures, debates, and blogs. Physical education teacher educators who participated in the course expressed appreciation for its structured nature, despite initial apprehension about using a blended learning method. One challenge encountered by educators was establishing strong relationships with the PSTs in this format. However, PSTs found the blended learning format easy to engage with and appreciated the flexibility it provided for completing offline activities at their own pace.

Simulations can be a valuable tool that allows students to engage in safe, real-life situations enabling PSTs to practice and apply the skills they have learned. They also provide an opportunity for students to experience how they would react in actual situations (Ade-Ojo et al., 2021). Educational simulations encompass various methods such as role-playing, virtual reality (VR), and augmented reality (AR). VR immerses students in a simulated environment where they can interact with their surroundings, while AR enhances the environment by overlaying virtual objects onto actual objects. When utilizing simulations, it is essential for physical education teacher educators to facilitate follow-up reflective discussions with students following their engagement with the simulation. This approach allows for a more comprehensive learning experience (Ade-Ojo et al., 2021). Wahl-Alexander and Brezwyn (2021) introduced an example of a VR simulation used in a physical education context. They created a virtual gym space within a local elementary school, allowing PSTs to familiarize themselves with the physical layout before entering the actual space. PSTs used the VR simulation to develop and set up lessons as if they were in the actual gymnasium. Wahl-Alexander and Brezwyn concluded that the VR simulation greatly enhanced the field experience, but noted that setting up the VR environment was time-consuming.

PETE programs that are considering the incorporation of MHL courses should consider recommendations by Atkins and Rodger (2016). They propose five essential elements for PST courses on MHL including understanding of the mental health issues commonly experienced by teachers, providing insight about the context for students who are at risk or experiencing mental distress, equipping PSTs with evidence-informed strategies for addressing students' mental health needs, emphasizing the importance of teacher self-care and how to ask for help when needed and offering opportunities for self-reflection.

Active learning courses offer an effective way for PSTs to make sense and retain the information about mental health. The quality of student-student and teacher-student interaction plays a crucial role in the success of any active learning pedagogy (Calderón et al., 2020). Introducing one or multiple courses on MHL using an active learning strategy can greatly contribute to preparing PSTs to effectively address the mental health issues they are likely to encounter in schools. While active learning pedagogies have demonstrated benefits in various educational contexts for PSTs, further investigation and research are still required to determine their effectiveness in teaching MHL.

## Conclusion

While the recent pandemics' effect on adolescent mental health is still ongoing, research shows that PE, when taught correctly, can have a positive effect on the development of student mental health.

Researchers have determined that physical activity is consistent with improved mental health in students by reducing anxiety, stress and depression, as well as increasing self-esteem (Bailey, 2006). When physical education is taught holistically, by a trained physical educator, the stigma associated with mental illness is reduced, and increases help-seeking behaviors in adolescents (Ryan, 2020).

As we transition towards resuming pre-pandemic routines, it is important that policy makers and educational leaders look at PE as an effective mental health intervention. By dedicating more instructional time to MHL, providing professional development opportunities and equipping PSTs with MHL knowledge and practical skills, physical education can be utilized as a powerful venue to address the growing mental health crisis adolescents are facing today.

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