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School-Based Mental Health Practice: The Impact of Physical Activity on Depression

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School-Based Mental Health Practice: The Impact of Physical Activity on Depression

Abstract

The relationship between physical and mental health has long been theorized to be profoundly important in understanding human behavior and development. This article aims specifically to highlight the state of existing research about the relationship between physical activity and the state of depression. Studies across the nation, summarized here, have found that healthy physical activity levels generally correlate with health within the mental and emotional arenas. Despite the abundance of existing literature on this topic, research remains scarce on the longitudinal effects of physical activity beginning with pre-puberty children into adulthood. Physical activity is a relatively cheap and non-harmful lifestyle intervention that school-based mental health practitioners can quickly implement in school settings. School social workers aligned with evidence based practice could stay current on advancing literature in this arena to learn what research has gleaned and apply that research within school settings. School social workers should also be encouraged to publish innovative ways they've implemented physical activity in addressing student depression. This is an opportunity for school social workers across the globe to influence future generations to live healthier and happier lives positively.

Keywords

School-based mental health practice, Depression, Physical Activity, MDD

According to the National Institute of Mental Health (2017), there were 16.2 million adults in the United States who experienced at least one depressive episode in 2016. That constitutes nearly 7% of the entire United States adult population. Weinberg et al. (2017) found there has been a significant increase in depression in the United States between 2005 and 2015, which is assumed to increase persistently. The depression epidemic appears to be on a continuous rise. Depression, which affects individuals across the lifespan, typically emerges during adolescence and persists throughout adulthood (McPhie & Rawana, 2015).

Major depressive disorder (MDD), requires possessing a minimum of 5 out of 9 symptoms, classified by The Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM 5), one of which must be depressed mood or anhedonia, for most of the day nearly every day for two consecutive weeks (American Psychiatric Association, 2013). Psychosocial interventions (behavioral therapy, cognitive-behavioral therapy, and interpersonal therapy) (Craighead, Johnson, Carey, & Dunlop, 2015), mindfulness-based cognitive therapy (Piet & Hougaard, 2011) psychotherapy (Cuijpers, Andersson, Donker & Van Straten (2011), pharmacological treatment and a combination of medication and therapy (Aarnson, Katzman & Moster, 2015) have all been found to be effective treatments for MDD. Regardless of the variety of effective treatments, there are disadvantages and unpleasant side effects of antidepressants, and psychotherapy is not always practical (Kruisdijk, Hendriksen, Tak, Beekman & Hopman-Rock, 2012). In addition, more than 50% of individuals with a MDD and other mental disorders do not seek nor receive treatment (Mojtabai et al., 2011; Clement et al., 2015; Thornicroft, 2007; Barney, Griffiths, Christensen & Jorm, 2009). Stigma of mental health and going to a mental health professional are distinct factors preventing individuals from seeking help (Clement et al., 2015; Schomerus & Angermeyer, 2008).

The COVID-19 pandemic brought significant disruptions to daily life, education, and social interactions, which had profound effects on the mental health of young people. Isolation, remote learning, and uncertainty about the future led to heightened levels of anxiety, depression, and stress among the youth. The crisis also shined a spotlight on the gaps in mental health care, making it clear that mental health challenges were widespread and urgent. As these issues became more visible, discussions about mental health became more prominent in public and private spaces, gradually chipping away at the stigma surrounding seeking help (Weiser & Alam, 2022). Young people, in particular, have increasingly embraced open conversations about mental health, using social media platforms to share their struggles and advocate for better mental health resources (Galante & Alam, 2019).

The youth mental health crisis has been a driving force in reshaping societal attitudes toward mental health stigma. With more young individuals and their families acknowledging the importance of mental well-being, there has been a cultural shift toward normalizing therapy, counseling, and other forms of support. This shift has also influenced policymakers, educators, and community leaders to prioritize mental health initiatives (Alam, 2025). The pandemic underscored the reality that mental health challenges are as critical as physical health issues, encouraging broader acceptance of the idea that seeking help is a sign of strength rather than weakness. This cultural change has not only empowered individuals to seek support but has also fostered a collective understanding of the importance of proactive mental health care (Alam, 2019).

In response to the growing demand for mental health services, state-level funding and training for mental health providers have increased since the pandemic. Many states have taken steps to expand access to school-based mental health programs, provide funding for community mental health centers, and train educators and healthcare professionals to recognize and address mental health

concerns. These investments signal a recognition of the urgent need to build a more robust mental health care infrastructure (Alam, 2019). While challenges such as workforce shortages and inequities in access remain, these efforts reflect a growing commitment to addressing the mental health needs of young people. By prioritizing mental health funding and provider training, states are not only responding to the current crisis but also laying the groundwork for long-term improvements in mental health care (Alam, 2025).

Physical Activity

Recently, complementary and alternative medicine (CAM) has been used as an intervention instead of traditional treatments (Bongiorno, 2005). CAM practitioners define depression as a multifunctional diagnosis modulated by psychological, dietary, spiritual, physiological, behavioral, and lifestyle factors (Bongiorno, 2005). CAM interventions for depression include traditional Chinese medicine, acupuncture, herbal therapy, homeopathy, yoga, and other physical activities (Freeman et al., 2011). CAM is currently not an evidence-based practice, and therefore, each category of CAM requires further research. Although physical activity can be considered a sub-category of CAM, physical activity is an evidence-based intervention (Heath et al., 2012). A common feature of major depressive disorder is fatigue and loss of energy, which can be ameliorated by the functional increased use of physical activity.

Although physical activity, exercise, and physical fitness are related, they are defined differently. Casperson, Powell, and Christenson (1985) defined physical activity as “any bodily movement produced by skeletal muscles that results in energy expenditure.” The intensity, duration, and frequency of muscular contractions determine energy. Exercise, a subcategory of physical activity, is defined as deliberate, persistent, structured, and repetitive activity to improve and maintain physical fitness. Physical fitness is defined as desired physical features and improved health. For this study, we will use the concept and definition of

exercise, which will be conceptually defined as the deliberate movement of the body and operationally defined as a minimum of half an hour of exercise five days a week (Casperson et al., 1985).

Methodology

We reviewed peer-reviewed academic literature focused primarily on depression and physical activity. Although other mental health topics were reviewed for comparison, our scope was the correlation between physical activity and depression, while all other literature was reviewed for comparative purposes. Google Scholar was the primary search engine, with university-affiliated databases being secondary and complimentary. Some of the literature was behind paywalls that our university affiliations did not have access to. Thus, we paid for them since they seemed especially relevant to the topic.

In our review of existing literature, we used the Overview-Preview-Inview method. This involves first overviewing the titles and descriptions of the articles that came up without clicking on them. After vetting at the overview phase, we selected several articles to preview. The preview phase involved reading the abstract and subheadings of selected articles and reviewing any tables and charts within. Finally, after vetting at the preview phase, we selected the articles inviewed in this manuscript, thoroughly vetting them meticulously.

Findings

Research has shown physical activity can benefit both physical and mental health. Studies have shown physical activity is correlated with a decrease in blood glucose, diastolic blood pressure, over-functioning of the hypothalamic-pituitary-adrenal axis, and improved cognitive functioning (Ross & Thomas, 2010; Lambourne & Tomporowski, 2010; Bongiorno, 2005; Hillman, Erickson & Kramer, 2008). Emotionally and psychologically, physical exercise has been shown to help reduce depression and depressive symptoms (Martinsen, 2008; Deslandes et al., 2009; Lawlor & Hopkar, 2001), prevent the onset of depression

(Martinsen, 2008; Aan het Rot, Collins & Fitterling, 2009), improve mood (McPhie & Rawana, 2015; Jerstad, Boutelle, Ness & Stice, 2010; Birkeland, Torsheim & Wold), reduce of depressive mood (Ströhle, 2009; Bartholomew, Morrison & Ciccolo, 2005), and improve self-esteem (Barton, Griffin & Pretty, 2012; Spence, McGannon & Poon, 2005).

Physical activity can help reduce the depression epidemic (Conn, 2010). The implementation of a healthy state of mind and a healthy state of body can support the depression epidemic both on an individual level as well as a national level. Individually, exercise can improve happiness and self-confidence (Alam & Rufo, 2019; Rasmussen & Laumann, 2013), reduce the risk of diabetes and cardiovascular disease (Archer, 2014), and reduce depression and its associated symptomatology (Dimeo, 2001). Nationally, depression has a significant economic impact because of medical care costs and low productivity at work due to absenteeism and presenteeism (Stewart et al., 2003). Therefore, physical exercise can help improve the economy by lowering medical care and increasing productivity.

Physical activity is categorized into aerobic and anaerobic exercises based on interval, intensity, and incorporation of muscle fibers (Patel et al., 2017). According to the American College of Sports Medicine, aerobic exercise is defined by the continuous use of large muscle groups and the utilization of adenosine triphosphate (ATP) for energy (Wahid et al., 2016). Aerobic exercise includes dancing, hiking, swimming, running, cycling, and kickboxing. According to the American College of Sports Medicine, anaerobic exercise is defined as purposeful, brief, and highly intense contraction of muscles (Patel et al., 2017). Anaerobic exercise includes high-intensity interval training, power/weightlifting, and sprinting. Both aerobic and anaerobic exercise have resulted in a significant reduction of depressive symptoms and lower scores on the Beck Depression

Inventory scale over the longitudinal period (Doyne et al., 1987; Stein & Motta, 1992).

According to nine randomized control trials (RCTs), aerobic, high-intensity anaerobic, and low-intensity anaerobic exercise was found to be an effective treatment for the reduction of depression for the elderly (age 60+) (Bridle, Spanjers, Patel, Atherton & Lamb, 2012), especially within a group forum (Mather et al., 2002). The use of exercise in 14 RCTs was conducted on young to middle-aged adults with depression (Singh & Fiatarone, 2000). It is important to note that although exercise does seem to reduce depressive symptoms and prevent depression, there are conflicting results on the benefit of physical activity and reduction of depression in middle-aged individuals due to methodological limitations and lack of follow-ups (Brosse, Sheets, Lett & Blumenthal, 2002). Research has found that implementation of physical activity during the early adolescent stage is a protective and resilience factor of the development of depressive symptoms in the later stages of adolescence (McPhie & Rawana, 2015; Elliot, Kennedy, Morgan, Anderson & Morris, 2012; Jerstad, Boutelle, Ness & Stice, 2010).

Even though it is impossible to confirm causation, data from epidemiological and correlational studies suggest there is a consistent relationship between depression and low levels of activity (Lopresti, Hood & Drummond, 2013). Minimal or decreased levels of activity and depression have a bi-directional relationship, meaning a baseline of depression can be a risk factor for reduced levels or absence of physical activity (Roshanaei-Moghaddam, Katon & Russo, 2009). The reason for the bi-directional relationship is unclear, and the reasons by which depression can lead to a decline in physical activity need to be further researched.

Research has shown that depression is relatively uncommon in pre-pubertal children, increases throughout adolescent years, and is the most common

post-adolescent stage (Maughan, Collishaw & Strings, 2013). Although it is uncommon for pre-pubertal children to be diagnosed with MDD, it appears that depressive symptoms and suicidal ideation are increasing amongst children under the age of 12 (Tishler, Reiss & Rhodes, 2007). Based on a National Survey, 11% of adolescents 12-17 years of age in the United States experienced one major depressive episode in 2013 (Lipari, Hughes & Williams, 2016). A possible explanation for the increase in adolescent depressive episodes can be due to the significant increase in sedentary behaviors, such as watching television, playing video games, computer use, and phone use, and a substantial decrease in physical activity amongst children (Tremblay et al., 2011). Watching television for more than two hours a day has been associated with decreased fitness, negative self-perception, decreased academic achievement, and unfavorable body composition. This disastrous combination reduced physical activity and increased sedentary behavior can significantly increase MDD diagnoses in pre-puberty children. Minimal research has been conducted on the longitudinal effect of physical activity beginning with pre-puberty children throughout adulthood. Physical activity is a relatively cheap and non-harmful lifestyle intervention that can easily be implemented in school settings, and it can improve the lives of children throughout their lives.

Future Implications

These findings highlight the significant potential of incorporating physical activity as a preventive and therapeutic intervention for depression, particularly within school-based mental health practices. The documented relationships between physical activity and reductions in depressive symptoms suggest that schools could serve as strategic environments for fostering healthy habits from an early age. By integrating structured physical activity programs into daily school routines, educators and mental health practitioners can address the alarming rise of depression among youth while also promoting long-term physical and

emotional well-being (Alam, 2024). These interventions could be particularly impactful in combating the sedentary behaviors associated with modern lifestyles, such as excessive screen time, which have been linked to increased depressive symptoms.

Moving forward, it is essential to prioritize longitudinal research that examines the effects of physical activity on depression across the lifespan, beginning with pre-pubertal children. Current evidence supports the short- and medium-term benefits of physical activity for mental health, but long-term, large-scale studies are needed to better understand its protective and resilience-building effects. Such research could provide deeper insights into the mechanisms underlying the bi-directional relationship between depression and physical inactivity, as well as identify critical periods where interventions are most effective. Additionally, studying the role of different types of exercise (e.g., aerobic vs. anaerobic) across various age groups and populations will enable the development of targeted, evidence-based interventions.

The integration of physical activity as a mental health intervention requires a collaborative effort among educators, policymakers, healthcare providers, and researchers. This effort should include increased funding for school-based mental health initiatives and professional training for school social workers and counselors to implement and monitor these programs effectively (Alam, 2019). Schools should also serve as hubs for innovative practices, with practitioners encouraged to publish their findings and share successful models of implementation. By adopting a proactive, multidisciplinary approach, physical activity can become a cornerstone of mental health treatment and prevention, equipping future generations with the tools to live healthier, happier lives.

Conclusion and Recommendations for Future Research

Moving forward, it is important to emphasize the value of physical activity in addressing depression through school-based support. School social workers

aligned with evidence-based practice could stay current on advancing literature in this arena to learn what research has gleaned and apply that research within school settings. School social workers should also be encouraged to publish innovative ways they have implemented physical activity in addressing student depression.

Schools can have a profound impact on the process of youth becoming adults, both intellectually and emotionally. This is an opportunity for school social workers across the globe to influence future generations to live healthier and happier lives positively.

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