




Academic Performance of Medical Students in the COVID-19 Pandemic: The Importance of Physical Activity

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Dear Editor,

Academic performance is the amount of learning or acquisition of skills or knowledge that is set for a particular course or age and can be measured by relevant tests (1). Trying to identify important factors in academic performance, present strategies, and take measures to reduce the damage caused by academic failure requires a lot of research in this field to determine the factors affecting academic performance, as well as the extent of the impact of each of these factors on academic performance. In addition, in recent years in universities, it has been observed that students' academic performance in some of the admission years and fields shows a significant difference (2).

During the outbreak of COVID-19, the death toll increased, and strict measures were taken to curb the spread of the disease in various parts of the world. Some of the measures taken to curb COVID-19 were home quarantine, social distancing, and the closure of clubs and universities. Many students were taking virtual classes for the first time and had not experienced such an epidemic; this led to significant fear and stress (3). Medical and dental students, in particular, experienced significant stress during the corona due to academic stress, exposure to infection and contamination, networking, and lack of sleep, which affected their mental health (4). Pandemic diseases, including COVID-19, often bring with them a wave of stress and anxiety that can cause physical and psychological health problems. For this purpose, in addition to drug and medical therapies, it is necessary to pay sufficient attention to the psychological and physiological dimensions of COVID-19 (5).

Researchers believe that physical activity allows students to be more active in the classroom, more focused in the classroom, experience a better learning process and, as

a result, increase students' academic performance. In addition to physical and mental health, exercise and physical activity increase the level of self-confidence and self-confidence in students and improve mental processes (6).

Today, exercise plays an important role in people's health, is an effective way to combat the epidemic and chronic diseases, and directly affects mental and physical health. In fact, people who are less physically active are at greater risk for psychological problems and chronic disease. In contrast, physical activity can strengthen the immune system, increase memory, mental and physical health (7).

Therefore, the World Health Organization (WHO) considers exercise an important factor in human mental health, and in 2002, its slogan was "Mobility is the key to health." Physical activity reduces the symptoms of depression, stress, and anxiety and significantly increases students' academic performance and mental health (8). In this regard, some theories have examined the relationship between exercise and the reduction of psychological and mood symptoms. Among them are various psychological theories (such as psychological distraction, self-efficacy, and social interaction) and biochemical theories (such as the body's reactions to physical activity and the secretion of hormones serotonin and endorphins) (9).

The World Health Organization (WHO) has issued guidelines on the minimum physical activity required during the COVID-19 pandemic. For example, for 18- to 64-year-olds who are most affected by COVID-19, he suggests doing at least 150 minutes of moderate-intensity physical activity and 75 minutes of high-intensity physical activity per week (6).

Regular physical activity improves the immune system, increases the secretion of hormones associated with happiness (such as oxytocin, dopamine, and serotonin),

and promotes a feeling of well-being (10). Also, people who do professional and semi-professional sports have good physical fitness, which in turn leads to an increase in their mental health. However, during the COVID-19 pandemic and the closure of sports clubs, the situation is different. Students and other people need to do more limited sports activities at home (11).

Numerous studies have been conducted on the academic performance and physical activity of medical students during the COVID-19 pandemic. In this regard, Mudenda et al. (10) investigated the role of mental health and physical activity in the academic performance of medical students during the COVID-19 pandemic. Studies have shown that 23.8% of students do not have anxiety. In contrast, 34.4%, 24.9%, and 16.9% of medical students had mild, moderate, and severe anxiety, respectively. Many students had low physical activity and too much rest. All of this led to a significant reduction in the mental health and academic performance of medical students during the COVID-19 pandemic. Coughenour et al. (5) examined changes related to students' physical activity during the COVID-19 pandemic. The findings indicated the prevalence of depression in students. Students who were less physically active also had a lower academic performance.

Furthermore, Osipov et al. (3) studied the effect of the closure of universities on students' physical activity and academic performance during the COVID-19 pandemic. The results of this study showed a decrease in physical activity and mental health of students during the COVID-19 pandemic and the closure of universities. Home quarantine and online classes have left students with low physical activity and academic performance. Talapko et al. (6) examined the mental health and physical activity of medical students during the COVID-19 pandemic. Studies have shown that 50% of medical students have depression, anxiety, and stress. Female students reported more psychological distress. On the other hand, it was found that students who had good physical activity during the COVID-19 pandemic had better mental health and academic performance.

Overall, the mental health, physical activity, and academic performance of many medical students have declined as nearly two years have passed since the COVID-19 pandemic and the closure of universities. Considering the significant role of physical activity in increasing the mental health and academic performance of students, it is necessary to take measures to increase the physical activity of

medical students.

Footnotes

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