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Smartphone Addiction among Students and its Consequences

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Annotation: This article analyzes the relationship between smartphone addiction and sleep quality among students. Based on scientific sources, it is highlighted that excessive use of smartphones negatively affects not only the learning process but also physical health, psychological well-being, and social life. It is particularly emphasized that using a phone in the evening reduces the secretion of the sleep hormone melatonin, disrupts biological rhythms, and lowers sleep quality. Research findings indicate that excessive screen time can lead to eye strain, sleep deprivation, anxiety, depression, and reduced social activity. Therefore, it is recommended that students regulate their daily screen time, limit phone use during classes, and pay more attention to physical activity and face-to-face social interactions.

Keywords: Smartphone addiction, sleep quality, student health, screen time, melatonin, digital technologies, healthy lifestyle.

In today's era of globalization, the rapid development of digital technologies-particularly the deep penetration of smartphones into all spheres of our lives-significantly affects the daily activities, learning processes, and social interactions of modern students. In higher education, smartphones are widely used in processes such as acquiring knowledge, exchanging information, and utilizing online platforms [1].

The rapid advancement of information and communication technologies, the global spread of the internet, and the integration of digital environments into nearly all aspects of everyday life have given rise to new phenomena and processes in human psychology. Among these, internet addiction and related regressive psychological states are problems that require special scientific attention. Internet addiction is not merely a habit or excessive use of technology, but rather a complex psychopathological condition that leads to profound changes in the functional structure of the psyche. In this process, the dynamics of an individual's social, emotional, and cognitive development change, sometimes manifesting in signs of regression. This phenomenon is particularly common among adolescents and young people, as this age period represents the most intensive yet vulnerable stage of personal development. Regressive psychological processes are expressed through the weakening of previously acquired social skills, mechanisms of emotional self-regulation, and cognitive strategies. As a result, individuals may return to simple, impulsive, and emotionally unstable reactions characteristic of childhood. In this sense, regression in the context of internet addiction can be explained not only through psychological but also neuropsychological mechanisms, since excessive immersion in digital environments can alter the activity of the frontal cortex, executive functions, and emotional regulation systems [2,3].

Excessive smartphone use can negatively affect not only the learning process but also physical health, mental well-being, and social life. In recent years, numerous studies have identified various harmful consequences of prolonged screen time. Some of the most important include:

Physical health (eyes and sleep): Staring at smartphone screens for long periods can harm eye health. In particular, the condition known as digital eye strain may cause redness, dryness, blurred vision, headaches, and neck pain. Among students, eye fatigue and discomfort before sleep due to late-night smartphone use are common. Moreover, using phones in the evening (before sleep) reduces sleep quality, as the blue light emitted from screens delays the release of melatonin and disrupts the circadian rhythm. As a result, falling asleep becomes more difficult, leading to sleep deprivation. Chronic sleep disturbances directly affect mood and mental state, with research confirming that poor sleep quality is associated with heightened symptoms of anxiety and depression [5].

Sleep researchers at Birkbeck, University of London, confirmed that the bright screens of smartphones, tablets, e-readers, and other devices disturb children's rest and lead to sleep disruption. According to their findings, sleep deprivation can occur in children as young as six months. The study surveyed 715 parents regarding their children's gadget use and sleep patterns. Results showed that each additional hour of device use reduced total sleep time by 15.6 minutes, with nighttime sleep decreasing by an average of 26.4 minutes and daytime sleep increasing by 10.8 minutes [6].

Furthermore, screen light reduces the production of melatonin—the hormone responsible for sleep. Consequently, more time is required to fall asleep, which negatively affects sleep quality. A person who does not get enough rest may experience fatigue, difficulty concentrating, and even depression during the day. The daily screen time of many students is significantly high, which disrupts their daily routine and negatively affects both health and learning. In particular, the habit of being distracted by phones during lessons lowers students' academic performance, divides their attention, and limits their achievements.

The harmful effects of excessive screen time on health (eye strain, sleep disturbance), psychology (increased anxiety and depression), and social life (isolation, lack of focus) have

been scientifically proven. Experts recommend that students maintain balanced screen use, particularly avoiding phone distractions during lessons. Specialists advise young people to limit recreational screen time (e.g., <2 hours per day) and incorporate more physical activity and face-to-face communication into their routines. This approach helps minimize the risks of smartphones while allowing for their beneficial use (information access, communication) [7]. Such practices not only support students' healthy lifestyles and mental well-being but also contribute positively to their academic success.

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