



TEXT NECK SYNDROME IS AN EMERGING CHALLENGE AMONG SMARTPHONE USERS: NARRATIVE LITERATURE REVIEW

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Abstract

Smartphone use has rapidly increased because of its availability and all its advantages making it indispensable in everyday life. Frequent smartphone use is correlated to high levels of addiction that result in text neck, both of which may impact health seriously. The epidemic of text neck syndrome, which affects individuals of all ages who use smartphones, has increased globally. The term "text neck" which was created by chiropractor Dr. Dean Fishman, and known as "turtleneck posture," is a repetitive stress injury to the neck brought on by having the head positioned forward and downward when gazing at a smartphone for several hours. Currently, it is challenging to function without a smartphone. As a result, smartphone use affects a wide range of social, physical, and psychological aspects. Notably, parents, community educators, counsellors, practitioners, policymakers, and all health care professionals should therefore be more aware of the long-term negative impacts of smartphone addiction and its sequelae of text neck syndrome, which has become an emerging public health concern. Therefore, this narrative literature review aimed to synthesize the essential concepts related to text neck syndrome and highlight the updated knowledge gaps to provide implications for further studies that help combat this growing epidemic of digital behavior.

Keywords: Text neck syndrome, smartphone addiction, biopsychosocial, digital behavior, review.

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Smartphone addiction from biopsychosocial perspectives

Smartphone use has increased by five times because of easy accessibility, particularly while travelling and studying (Priya & Subramaniyam, 2022). A variety of advantages can be gained from using smartphones, such as schedule management, enjoyment of music/videos/films, game playing, promoting safety, expanding horizons, alleviating stress, e-mail access, information search, entertainment, and social interaction purposes (Panova et al., 2020; Alburban et al., 2022; Sherer & Levounis, 2022). Taking these numerous benefits together with the increasing duration of daily smartphone use will lead users towards unintentional time-wasting, which may be considered a specific maladaptive form. This maladaptive dependence on smartphones becomes problematic, carrying the risk of smartphone addiction (Alkhateeb et al., 2020). Problematic smartphone use or addiction both refer to a lack of control over smartphone use (Sun et al., 2019).

Given the maladaptive use of smartphones and the similarities with other addictive behaviors, smartphone addiction might cover addiction-like symptoms such as salience, mood modification, tolerance, withdrawal, conflict, and relapse (Billieux et al., 2015). Mental health issues such as anxiety, depression, loneliness, stress, and boredom have been positively correlated to the excessive use of smartphones (Geng et al., 2021; Zhang et al., 2021). Smartphone addiction may be related to unsettling behaviors, such as signs of unrestrained use, relationship issues, and job intrusion (Alburban, 2022). The risk of early cognitive decline is increased by excessive screen use, which can also delay learning and acquisition (Neophytou et al., 2021). In such a situation, addiction and subsequent usage are correlated to memory and/or attention issues, which have a negative impact on students' academic performance and quality of life (Alkhateeb et al., 2020; Buctot et al., 2020; Alinejad et al., 2022). In other words, the persistent, difficult-to-control need to use a smartphone in ways that hinder daily

functioning has negative consequences not only for mental but also physical health (Sunday et al., 2021).

Smartphone addiction can have negative physical impacts such as digital eye strain (Chu et al., 2023), sleep disorders (Zhang et al., 2023), and musculoskeletal pain (Zirek et al., 2020; Mustafaoglu et al., 2021). University students who use their smartphones excessively are more likely to develop strain injuries and text neck syndrome (Shah & Sheth, 2018). In this context, smartphones have emerged as a crucial global concern that perpetuates daily life (Alkhateeb et al., 2020; Albursan et al., 2022). Smartphone addiction has become a serious public health issue that needs urgent attention due to its enormous prevalence and serious consequences (Okasha et al., 2022).

Text Neck Syndrome

Text neck is a term applied to the dangerous and harmful condition resulting from extensive and long-term use of mobile phones. This condition is known to be affecting most smartphone users as an amplifying, sharp global burden, affecting populations of all age groups and both genders (Fiebert et al., 2021). According to recent studies, smartphone users frequently experience pain in their neck, shoulders, and thumb, with the intensity of the symptoms increasing with the amount of time spent using the device. Long-term use results in bad posture, including rounded shoulders, a forward head posture, and slouched shoulders (Jung et al., 2016). The load increases as the head bends, and at 15°, 30°, 45°, and 60°, respectively, the weight is computed to be 27, 40, 49, and 60 pounds. When using a smartphone, people frequently look down to focus on the lowered objects and keep their heads forward for extended periods of time, which can lead to neck strain. As a compensatory mechanism and to maintain balance, the cervical lordosis is reduced, while the higher thoracic posterior curve is formed. This posture is referred to as forward head posture, turtleneck, or text neck (Kim et al., 2016).

This stresses the muscles, ligaments, and joints and causes nerves to be compressed, causing tingling and numbness in the hands. Increased biodynamical stress coupled with a forward head posture might lead to musculoskeletal issues like neck pain (Jyothsna et al., 2019). In a recent study, physiotherapy students who were addicted to smartphones revealed higher rates of musculoskeletal pain in the wrist (52.4%), shoulder (57.1%), and lumbar (76.2%), whereas the highest complaint was neck pain (83.3%) (Ladeira et al., 2023). Those researchers found a significant positive association between neck

pain and hours spent using the smartphone (Ladeira et al., 2023). Neck pain with or without radiculopathy can negatively affect physical and mental wellbeing (Mansfield et al., 2023).

In addition to neck pain, some of other common symptoms of text neck syndrome are upper back pain when using a handheld device, nagging or sharp pain in the neck or shoulders at the end of the day, general shoulder pain and tightness, stiff neck. Additionally, radiating pain and intermittent or constant headaches became worse when looking down (Chu et al., 2020). If a cervical nerve becomes pinched, neurological symptoms can radiate down the arm and into the hand. If left untreated, it leads to severe inflammation of neck ligaments, muscles, nerves, and arthritic damage and leads to permanent and serious damage such as flattening of the spinal curve, onset of early arthritis, spinal malalignment, spinal degeneration, disc compression, nerve damage (Moustafa et al., 2020), and loss of lung volume and capacity (Chu et al., 2020).

Neck pain can occur because of variables relating to the workplace, such as workload, computer use, and study time. However, young people and children are also susceptible to neck pain. Strong neck flexion when studying, sitting, watching television, and using cellphones (or other handheld devices) was correlated to neck discomfort, according to cross-sectional research of 207 children and adolescents with non-specific neck pain (Fares et al., 2017). Additionally, a study by Scarabottolo et al. found that teenagers who were physically inactive had an increased likelihood of developing cervical pain (odds ratio (OR) = 1.49 (1.06-2.10)) (Scarabottolo et al., 2017). Neck pain is a major disabling musculoskeletal problem that represents an enormous burden for individuals, families, and modern society (Hurwitz et al., 2018). This figure challenges the need for rehabilitation services, demonstrating that at least one in three persons worldwide will require rehabilitation at some point throughout their illness or injury (Cieza et al., 2020). To help more users in need, we contend that ergonomic advice and rehabilitation must be provided locally to communities as a crucial component of basic healthcare.

CONCLUSION

The risks of continuous use of smartphones have extensively penetrated all ages, including the elderly, adults, adolescents, and even children. With the global use of smartphones growing every year, text neck syndrome is on the rise steadily. To reduce the risk of smartphone addiction and the resulting text neck, it is critical that parents, community educators, and counsellors are properly

aware of this issue. Smartphone users must be taught the right posture to use their devices. This epidemic deserves further clinical and scientific attention.

Implications and recommendations for future work

According to our findings, neck pain of varying degrees shouldn't be seen in isolation but rather as one of many comorbid diseases that a patient may encounter (Green et al., 2018; Martínez-Borba et al., 2021). The relationship between gender and personality types and the risk of neck pain is still unknown, therefore, further studies are necessary to determine the relationship between neck pain and gender, personality, and several other psychological aspects. More accurate measures of sleep duration and sleep quality would have been required to determine whether the experiences of fatigue were caused by insufficient or poor-quality sleep, given the relevance and potential interaction of trait-based psychological factors like sleep and fatigue processes with neck pain (Myllyntausta et al., 2021). Also, other habits such as using other electronic devices or doing physical exercises should be identified in future studies to control confounding factors that may also affect the posture and psychology of the students. Current rules emphasize that occupational safety and health promotion should take into account organizational support as well as individual characteristics; as a result, a wider variety of risk factors associated with text neck syndrome should be assessed.

More multinational comparative research that evaluates local-regional and socio-cultural determinants of behavior is warranted to better assess the causes and implications of behavioral addiction in various populations in this era of digital and advanced connectivity. It is highly advised to evaluate the assessment of the predictive validity of scales and provide suitable cutoff scores for dependency in both the male and female genders.

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