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Can Neck Holders Reduce the Risk of Neck Musculoskeletal Disorders Among Smartphone Users?

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ABSTRACT

Smartphone overuse has been associated with musculoskeletal disorders, particularly neck disorders, often caused by poor posture, such as forward head tilt. Neck pain and stiffness are prevalent among smartphone users. Maintaining a neck flexion angle of 0-15 degrees during smartphone use may reduce the risk of these disorders. Smartphone neck holders, designed to position phones at eye level, could help improve posture and alleviate neck strain. However, their ergonomic effectiveness and design remain unstudied, highlighting the need for research to ensure these devices promote neck health and prevent musculoskeletal pain.

The smartphone is one of the most innovative technologies of the current century (Marques, 2016). Although smartphone use has become an inseparable part of daily life, excessive use is linked to various health problems (Wacks & Weinstein, 2021). Musculoskeletal disorders are common among smartphone users (Eitivipart et al., 2018), particularly in those who are addicted to their devices (Albaker et al., 2023). These users face a significantly higher risk of developing neck pain, which is a major health concern (Chen et al., 2025). Neck pain is the most prevalent musculoskeletal complaint among smartphone gamers (Ahmadi Shoar et al., 2025; Khan & Chaikumarn, 2024). Research on smartphone users has reported a neck pain prevalence rate of 73% (Bibi et al., 2024). Moreover, studies have shown that smartphone overuse in office workers increases the likelihood of neck pain by sixfold (Derakhshanrad et al., 2021). A forward head posture-a common habit among smartphone users-is associated with neck stiffness (Ali et al., 2022) and pain (Namwongsa et al., 2018). In contrast, maintaining a neck flexion angle between 0-15 degrees during smartphone use is recommended to help prevent neck pain (Namwongsa et al., 2019).

Smartphone neck holders, also known as neck-mounted phone holders, are accessories designed to position the device at eye level. Typically, these consist of a flexible neck strap and a mount to secure the smartphone. The adjustability of these holders may help users reduce neck flexion and maintain an upright head posture. Over time, such devices could contribute to improved posture and relief from neck pain by decreasing cervical strain (Mohamed

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Abdel Moneim et al., 2025). In addition, the use of neck holders can also prevent some improper postures that impose pressure on different body parts.

However, the effectiveness and usability of smartphone neck holders have not yet been studied. Although various models are available on the market, they feature different designs and lack ergonomic evaluation. Some designs may be poorly conceived and could potentially harm users' health. Therefore, there is a clear need for ergonomic assessment, redesign, and the development of an optimal neck holder design to ensure that these devices improve neck posture and help prevent neck and cervical pain.

Authors' Contributions

Milad Gholami: Searching related literature; Final review and approving the final manuscript file. **Reza Kalantari:** Conceptualization; Study design; Drafting the manuscript; Final review and approving the final manuscript file. **Atefeh Kalantari:** Searching related literature; Final review and approving the final manuscript file.

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Conflicts of Interest

There are no competing interests.

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Ethical considerations

The ethics committee of Zanjan University of Medical Sciences approved this research (Code: IR.ZUMS.REC.1403.356).

Using Artificial Intelligence

No artificial intelligence tools were used in this research.

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