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Effect of smartphone usage on neck muscle endurance, hand grip, and pinch strength among healthy college students: A cross-sectional study

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In recent years, there has been a significant increase in global smartphone usage driven by different purposes. This study aimed to explore the effect of smartphone usage on neck muscle (flexors and extensors) endurance, hand grip, and pinch strength among young, healthy college students. In total, 40 male students were recruited for this study; 20 of them belonged to the smartphone-addicted group, while the other 20 were in the non-addicted group based on their Smartphone Addiction Scale—Short Version (SAS-SV) scores (the threshold for determining smartphone addiction: 31/60). Neck flexor endurance time, the ability to perform a neck extensor muscle endurance test, and hand and pinch grip strength were assessed. Multivariate Analysis of Variance (MANOVA) was used to assess between-group differences in the mean values of neck flexor endurance time, hand grip, and pinch grip. A significant group effect (Wilks' lambda = 0.51, $F(5,34) = 6.34$, $p = 0.001$, partial eta squared = 0.48) was found. A decrease in neck flexor endurance time was observed in the smartphone-addicted group compared with that of the non-addicted group ($p < 0.001$). However, there was no notable difference in the neck extensor muscle endurance test or in hand grip and pinch grip strength of both hands between groups ($p > 0.05$). Using a smartphone for a prolonged time might affect neck flexor muscle endurance; however, more research is needed to explore the long-term effects of using smartphones on neck muscle endurance and hand/pinch grip strength and the risk of developing upper limb neuromusculoskeletal dysfunction.

References

1. Alhassan, A.A.; Alqadhib, E.M.; Taha, N.W.; Alahmari, R.A.; Salam, M.; Almutairi, A.F. The relationship between addiction to smartphone usage and depression among adults: A cross sectional study. *BMC Psychiatry* 2018, 18, 148.
2. Thomée, S.; Härenstam, A.; Hagberg, M. Mobile phone use and stress, sleep disturbances, and symptoms of depression among young adults—a prospective cohort study. *BMC Public Health* 2011, 11, 66.
3. Kim, H.-J.; Kim, J.-S. The relationship between smartphone use and subjective musculoskeletal symptoms and university students. *J. Phys. Ther. Sci.* 2015, 27, 575–579.
4. Inal, E.E.; Demirci, K.; Çet'Intürk, A.; Akgönül, M.; Sava, S. Effects of smartphone overuse on hand function, pinch strength, and the median nerve. *Muscle Nerve* 2015, 52, 183–188.
5. Din, S.T.; Hafeez, N. Relationship of smartphone addiction with handgrip strength and upper limb disability. *Int. Surg. Case Rep.* 2021, 6, 1–7.
6. N.L.; Ibrahim, M.M.; Mahmoud WS, E.D. Evaluating hand performance and strength in children with high rates of smartphone usage: An observational study. *J. Phys. Ther. Sci.* 2020, 32, 65–71.
7. Namwongsa, S.; Puntumetakul, R.; Neubert, M.S.; Boucaut, R. Factors associated with neck disorders among university student smartphone users. *Work* 2018, 61, 367–378.
8. Ning, X.; Huang, Y.; Hu, B.; Nimbarte, A.D. Neck kinematics and muscle activity during mobile device operations. *Int. J. Ind. Ergon.* 2015, 48, 10–15.

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Biography

Adel Alshahrani is Associate Professor and Physiotherapy Consultant at Najran University in Saudi Arabia. His specialty is balance and Vestibular Rehabilitation. He has built this model after years of experience in research, evaluation, teaching, and administration both in hospital and education institutions. He is working as vice-rector for development & quality for international rankings advisor and vice-dean for development & quality in the college of applied medical sciences. He is working as an academic quality reviewer at the national center of assessment and academic accreditation in Saudi Arabia.

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