ORIGINAL ARTICLE

PREVALENCE AND AWARENESS OF TEXT NECK SYNDROME & ADDICTION TO SMARTPHONES IN DOCTOR OF PHYSICAL THERAPY STUDENTS OF PESHAWAR

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ABSTRACT

Objective: To determine the prevalence of text neck syndrome in Doctor of Physical Therapy students, their addiction level to smart phones and awareness regarding text neck syndrome.

Material & Methods: This cross-sectional survey was conducted on Doctor of Physical therapy students studying in constituent and affiliated institutes of Khyber Medical University Hayatabad, Peshawar. Data was collected from 299 participants recruited through systematic random sampling. SPSS version 20 was used for data analysis.

Results: Out of 299 participants, 76 (25.4%) had text neck syndrome while 223 (74.6%) had no text neck syndrome. Regarding awareness of text neck syndrome, 79(26.4%) were aware of text neck syndrome, 101(33.8%) have heard about it but don't know what it is, while 119(39.8%) were not aware of the text neck syndrome. The calculated addiction rate of our population was found to be 117.03.

Conclusion About one fourth of the students (25.4%) were suffering from text neck pain with overuse of smart phone and low level of awareness regarding it, therefore preventive measures should be taken to minimize the occurrence of text neck syndrome.

Key Words: Addiction, Awareness, Prevalence, Smart phone, Text Neck Syndrome.

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INTRODUCTION

In today's world with the advancement in mobile technology people spend enormous time on using hand held devices such as tablets and smart-phones, which results in prolonged neck flexion with forward bending, resulting in "Text Neck" (TN) or "turtle neck posture".[1,2] The term TN, a 21st century syndrome was introduced by a US chiropractor named Dr. Dean L. Fishman and the term Text Neck Syndrome (TNS) is used to describe the neck-ache and injury due to repetitive stress or an overuse syndrome resulting from prolonged forward-flexed position for using his smart phone or any other electronic device at a stretch.[3,4] TNS may lead to many symptoms, such as chronic headaches, neck-ache, pain and tightness in the shoulder, nagging to severe

pain and muscle spasms in the upper back and changes in spine curvature.[4,5] The site of pain most commonly reported is the neck (68%), followed by the upper back (62%), the right shoulder (52%) and left shoulder (46%).[5]

The estimated number of smart-phone users around the world was greater than 1.08 billion in early 2012, and it is growing rapidly. Although its use is increasing, excessive use can create problems.[6] Smart-phone addiction is a universal phenomenon ranging from 9.3% to 48% in the population.[7,8] Addiction is considered by WHO as dependence, "as the continuous use of something for the sake of relief or stimulation, which often causes cravings when it is absent".[7] A study reported, in text messaging, an unusual range of the tilt angle to the device between 56.12 degree to 75.3 degree [8], whereas the normal range of angle to use the smart phone is 33 degree to 45 degree when measured from vertical.[9] The most desirable posture for smart phone users, during standing or sitting is to hold the head roused and keep the smart phone at the level of eye.[8]

With rise in population and dependency on smart-phones, health hazards related to heavy use have also increased.[5,9,10] The smart phone addiction has now surpassed the internet addiction, where it stays at 8.4% as compared to 7.7% for internet.[11] According to The Wireless Association, texting statistics have raised tremendously, where in June 2006, 12.5 billion texts were sent monthly in USA which increased to 196.9 billion by June 2011.[4] Among many other issues related to extensive smart-phone use, 'text neck' has been considered as the most problematic one. Moreover, the addictive or habitual activities have made Smart phone use even more prevalent.[9]

TNS is a growing health concern and can affect large number of population all over the world.[12] A recent systematic review suggests that prevalence of musculoskeletal problems with mobile phone usage are high ranging from 17.3% to 67.8% for neck complaints.[3] A current study concluded that 79% of the population of age group 18-44 carry their smart phones nearly all the time, spending only 2 hours of their outdoor day without their smart phone in hand.[3, 4]

Other research also associates the time of interaction with musculoskeletal symptoms, mainly in the younger population. This population is composed of a large number of students, including those at the university level, who use the device for academic purposes. The younger generations are digital natives born in the age of mobility and use the technology in different contexts in their daily lives. Consequently, they are more prone to be affected by musculoskeletal symptoms through the use of smart phones, as seen in studies with populations from Korea, China[13] Canada, Switzerland[14] as well as other studies comparing young Americans and Koreans.[15, 16]

This study was being conducted because there is limited literature available on text neck syndrome and besides there is no study conducted in Pakistan on the text neck, its awareness and smart-phone addiction. Not only the results from this study helps to understand the burden of TNS, but will also act as a pilot data to carry out population based studies on the public awareness and postural education in the community. In order to decrease the risk of developing musculoskeletal conditions due to smart phone use in future there is a need to develop specific ergonomic protocols.

MATERIAL AND METHODS

This study was a cross-sectional survey conducted on Doctor of Physical therapy (DPT) students studying in constituent and affiliated institutes of Khyber Medical University Hayatabad, Peshawar. The period

for data collection in the study was from April to Sep 2019. The study population was students of total of nine DPT institutes. Institute Of Physical Medicine And Rehabilitation, Khyber Medical University, Rehman College of Rehabilitation Sciences, Mahboob Medical Institute, Institute of Health Sciences, NCS – University System, Ahmad Medical Institute, Premier Institute of Health & Management Sciences, North West Institute of Health Sciences, Pakistan Education Foundation Peshawar.

Total population calculated was 1297. Estimated sample size was 297 (www.openepi.com) with a confidence interval kept at 95%. In addition, 10% extra (30) of estimated sample size was collected to compensate for the drop outs or failure to return the questionnaires. There were 28 participants who did not return the questionnaires. The final sample analyzed was 299. The sampling technique used was systematic random sampling. Attendance sheets were collected from the administration. Students with even roll numbers who were smart phone users were given the questionnaires. In case the student was absent or did not possess a smart phone, the sequence was followed by next even Roll number.

The included subjects were DPT students who were smart phone users aged between 18-27. Subjects having congenital cervical problems, traumatic and pathological cervical problems, students below the age of 18 or above the age of 27 were excluded. Ethical approval was awarded from Institutional Review Board KMU (IPMR). Permission was taken from heads of concerned institutions before data collection. Nature and purpose of study was explained and an informed consent was signed from each subject participating in the study.

Survey tool was a self-administered Questionnaire in English language. The questionnaire used was taken from three different researches i-e: Awareness of text-neck syndrome in young adult population,3 Text neck syndrome- Systematic review4 and The smart phone addiction scale, Development and validation of a short version for adolescents,17 to address all the issues. The questionnaire was well explained by the researchers and distributed among participants of the study. The questionnaire included four parts:

1. Demographics (Name, age, gender, year of study, contact information)
2. Questions related to neck pain after smart-phone use(symptoms of text neck)
3. Questions related to awareness and knowledge related to text neck syndrome
4. Smart phone addiction scale (SAS) to measure self-reported addiction to smart phone use

The SAS consisted of six variables and 33 questions on a six-point Likert scale (1: ‘‘strongly disagree’’ and 6: ‘‘strongly agree’’) based on the Internet addiction scale and smart phone characteristics. The greater rating shows a greater risk of addiction to smart phones. The overall scale score varies from 33 to 198. The minimum score is 33 while the maximum is 198.

RESULTS

A total of 299 participants in the age group of 18 to 27 years old were included in the survey. 170 (56.9%) of the sample consisted of females while 129(43.1%) were males. The mean age of participants was 21.12 ± 1.68.

The prevalence of TNS was determined as text neck syndrome and no text neck syndrome. The outcome of TN symptoms were assessed by the responses in the questionnaire, the response options were Never, Occasionally, Sometimes, Often and Always. Never was considered as No TNS while Always, Often, Sometimes and Occasionally as TNS. Out of total

participants 76(25.4%) had TNS while 223(74.6%) had No TNS. Of the students who had TNS (n=76), 67.1% (n=51) were female while remaining 32.9% (n=25) were male. Out of 299 participants, 119(39.8%) students were not aware of TNS, 101(33.8%) stated that they have heard about it but don't know what it is and 79(26.4%) students were aware of TNS. The calculated Addiction rate of our population was found to be 117.03.

DISCUSSION

The increase in addiction rate and lack of awareness can be major contribution to TNS. With the advancement in technology the dependence on smart phones also increases. This indicates that addiction to smart phones is likely to develop in the near future and become one of the most influential addiction kinds. This can be attributed to a fascination with technology and eagerness to have smart phones as a sign of maintaining pace with the modern world.[17,18,19]

The prevalence of TNS in our study was 25.4%. These results could be attributed to the lack of education and level of ignorance regarding this syndrome. The awareness regarding TNS is not adequate and knowledge regarding this syndrome is important as it is a cumulative stress injury and can be prevented through education.[3]

In our study out of 299 students, 51.8% students sometimes feel neck pain after using their smart phones and 19.4% students claimed occasionally, 14% of students responded never, 10.7 % often felt pain, while 4% claimed that they always experience pain in neck after using their Smartphone. A 5 years cohort study on texting on mobile phones and musculoskeletal disorders in young population suggested that neck pain 'The 4th leading cause of disability'[1] is the most prevalent, is the short term as well as the long term effect of excess usage of smart phones.[3,6,8]

Findings of our results for headache showed 32.8% of the students sometimes feel headache after prolong smart-phone use. 20.7% students never experienced, 16.1% of the students responded always, 15.7% students felt often, while 14.7% of the students occasionally experience headaches after prolong smart phone use. Looking into mobile screens in flexed neck posture can lead to muscle tightness that can sometimes irritate muscles and nerves to the head, causing tension type headache.[4] In our study findings, TNS prevalence was observed in both the genders. The results indicate that TNS was more prevalent in females (67.10%) than in males (32.89%), which is this consistent with the findings The reason of higher smart phone use in female population could be their emotionally depressed behaviour which could be a possible factor in their excessive use of social networking, turning to increase online social interaction. It is suggested that biological and psychosocial variables justify the more prevalent occurrence of female depression. The impact of sex steroids on the maturing pituitary adrenal hypothalamic axis may boost female sensitivity to stress, while androgens appear to play a protective function in men. Psychosocial variables include gender differences in stress management, gender specific prospects and social cognitive function differences, with women being more sensitive to dismissal.[20]

Furthermore, depression and anxiety also projected to sleeplessness. Depression and anxiety are therefore mediators between over use of the smart phone and sleeplessness.[18] In our study 24.7% strongly agreed that they lack adequate sleep due to excess smart phone use, 18.1% strongly

agreed that they check websites of social networking (twitter, Facebook etc.) right after waking up. 28.4% students agreed that it is difficult for them to concentrate in class, do tasks or work because of smart-phone use. 21.1% strongly agree that many people around them tell them about their too much smart phone usage. A research exploring the links between troubled internet use and physical and psychological symptoms of adolescents showed that excessive use of the internet had indirect adverse effects due to sleep deprivation.[18] Findings of the study showed that daytime dysfunction was greater in elevated smart phone usage group, than in the low smart phone usage group, which is an element of sleep quality. This may be due to dysregulation of sleep. Positive associations were found between subjective quality of sleep, sleep disturbance, daytime dysfunction, and sleep quality scores globally and SAS scores.[18] In their research, the severity of smart phone use was not an autonomous predictor of sleep quality. Long-term media use can trigger physical pain, such as muscle aches and headaches, which can adversely affect sleep.

CONCLUSION

This study has demonstrated a low level of awareness of TNS amongst young adult population and also it showed lack of knowledge of TNS in this population. It is important to understand all the biomechanical and physiological processes of the body and the activities of interaction with smart phones, which already suggest a direct relationship as a predominant factor to the painful mechanism in young students. It is increasingly more common to see individuals with their “heads down’, looking into the bright screen of smart phones, seduced by the content in those devices. These are contexts present in today’s society, which condition some behaviours that may not be healthy. Faced with this panorama, sometimes gloomy and real, it is relevant to point to perspectives that alert to the quality of the interaction with the device.

REFERENCES

1. Damasceno GM, Ferreira AS, Nogueira LAC, Reis FJJ, Andrade ICS, Meziat-Filho N. Text neck and neck pain in 18–21-year-old young adults. European Spine Journal. 2018;27(6):1249-54.
2. Shah PP, Sheth MS. Correlation of smartphone use addiction with text neck syndrome and SMS thumb in physiotherapy students. International Journal Of Community Medicine And Public Health. 2018;5(6):2512-6.
3. Samani PP, Athavale NA, Shyam A, Sancheti PK. Awareness of text neck syndrome in young-adult population. International Journal Of Community Medicine And Public Health. 2018;5(8):3335-9.
4. Neupane S, Ali U, Mathew A. Text Neck Syndrome-Systematic Review. Imperial J Interdiscipl Res. 2017;3(7):141-8.
5. Berolo S, Wells RP, Amick III BC. Musculoskeletal symptoms among mobile hand-held device users and their relationship to device use: a preliminary study in a Canadian university population. Applied ergonomics. 2011;42(2):371-8.
6. Mok J-Y, Choi S-W, Kim D-J, Choi J-S, Lee J, Ahn H, et al. Latent class analysis on internet and smartphone addiction in college students. Neuropsychiatric disease and treatment. 2014;10:817.
7. Alhazmi AA, Alzahrani SH, Baig M, Salawati EM. Prevalence and factors associated with smartphone addiction among medical students at King Abdulaziz University, Jeddah. Pakistan journal of medical sciences. 2018;34(4):984.
8. Lee H, Choi YS, Lee S, Shim E, editors. Smart pose: mobile posture-aware system for lowering physical health risk of

smartphone users. CHI'13 Extended Abstracts on Human Factors in Computing Systems; 2013: ACM.
9. Lee S, Shin G, editors. Relationship between smartphone use and the severity of head flexion of college students. Proceedings of the Human Factors and Ergonomics Society Annual Meeting; 2015: SAGE Publications Sage CA: Los Angeles, CA.
10. Lee S, Kang H, Shin G. Head flexion angle while using a smartphone. Ergonomics. 2015;58(2):220-6.
11. Lee J, Seo K. The comparison of cervical repositioning errors according to smartphone addiction grades. Journal of physical therapy science. 2014;26(4):595-8.
12. Vate-U-Lan P. Text Neck epidemic: a growing problem for smart phone users in Thailand. Int J Comput Internet Manag IJCIM. 2015;23(3):55.1-.6.
13. Long J, Liu T-Q, Liao Y-H, Qi C, He H-Y, Chen S-B, et al. Prevalence and correlates of problematic smartphone use in a large random sample of Chinese undergraduates. BMC psychiatry. 2016;16(1):408.
14. Haug S, Castro RP, Kwon M, Filler A, Kowatsch T, Schaub MP. Smartphone use and smartphone addiction among young people in Switzerland. Journal of behavioral addictions. 2015;4(4):299-307.
15. Regiani Bueno G, Garcia LF, Marques Gomes Bertolini SM, Rodrigues Lucena TF. The Head Down Generation: Musculoskeletal Symptoms and the Use of Smartphones Among Young University Students. Telemedicine and e-Health. 2019.
16. Shin L. A comparative study of mobile internet usage between the US and Korea. Journal of European Psychology Students. 2014;5(3).
17. Kwon M, Kim D-J, Cho H, Yang S. The smartphone addiction scale: development and validation of a short version for adolescents. PloS one. 2013;8(12):e83558.
18. Demirci K, Akgönül M, Akpinar A. Relationship of smartphone use severity with sleep quality, depression, and anxiety in university students. Journal of behavioral addictions. 2015;4(2):85-92.
19. Aljomaa SS, Qudah MFA, Albursan IS, Bakhiet SF, Abduljabbar AS. Smartphone addiction among university students in the light of some variables. Computers in Human Behavior. 2016;61:155-64.
20. Chen B, Liu F, Ding S, Ying X, Wang L, Wen Y. Gender differences in factors associated with smartphone addiction: a cross-sectional study among medical college students. BMC psychiatry. 2017;17(1):341.