ORIGINAL ARTICLE

Are You Suffering Pain Neck Due to Smart Phone Text Neck Syndrome

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ABSTRACT

Aim: Text neck causes neck pain and soreness. One's looking down on smart phone can cause upper back pain ranging from chronic, nagging pain to sharp and sever upper back muscle spasm. Shoulder pain and tightness with possible shoulder pain. The objective of this study was to determine the prevalence of different causes of text neck syndrome amongst medical undergraduates.

Methods: It was a cross-sectional survey using non-probability convenient sampling technique at Akhtar Saeed Medical and Dental College, Lahore from June 2018 to July 2018 in a period of two months. Our sample size was 101 undergraduate students from first year till final year. The inclusion criteria of the study were all medical undergraduates who were using smart phone, tablet and laptop for past six-month duration and above. We filled all questionnaire at the spot. The exclusion criteria of the study were all questionnaire which were filled with the help of colleague, going through internet, and left incomplete. Data was obtained using pre-tested self-administered questionnaire and neck disability index proforma.

Results: Out of total 101 medical student, there were 59 (58.4%) were female and 42 (41.6%) were male. All participants were using smart phone for past five years. In questionnaire, students were asked about the preference of usage device and e-reading. They were asked about warm-up exercise before using smart phone or other devices. Their practices were determined.

Conclusion: We concluded that majority of the students were suffering neck pain that was aggravated with using smart phone or other electronic devices. They don't warm up before reading or using device.

Keywords: Smart phone, neck pain, text neck syndrome

INTRODUCTION

The anatomy of neck or cervical spine is complex. It has coordinated network of the muscles, bones, nerves and spinal cord. The irritation of the nerves can cause neck and shoulder pain[1]. It has been estimated that about 79% of the population aged between 18 to 44 year keep their cell phone with them all time with exception of two hours' time when they spend time in walking[2]. It was first coined by US chiropractor Dr. Dean L Fishman. It occurs due to repetitive stress injury or overuse with neck in flexion in forward direction and bent down to see the mobile or other electronic devices[3].

In 21st century, the advancement in mobile technology has brought more and more people together daily using smart phones. They spend more time using smart phone, tablets, laptops in call, text e-reading and using social media. This result in flexion of neck for prolonged time causing text neck[4,5,6,7]. It is a growing health problem and young generation may be affected more. It occurs due to excessive and repeated stress to the flexed neck. It may also cause neck pain, shoulder pain, upper backache, chronic headache, and increased curvature of spine[8]. If this condition is not treated it may result in early arthritis, permanent damage and result into overuse syndrome[9,10,11]. Currently little research is available on text neck syndrome. There need evaluation of this condition and its association with different factors in young population. This study will help us in gaining knowledge about association different causes of text neck syndrome.

The objective of this study was to determine the different causes of text neck syndrome amongst medical undergraduates.

METHODOLOGY

It was across-sectional survey using non-probability convenient sampling technique at the Department of Akhtar Saeed Trust Teaching Hospital, Lahore from June 2018 to July 2018 in a period of two months. Our sample size was 101 undergraduate students. The inclusion criteria of the study were all medical undergraduates who were using smart phone, tablet and laptop for past six-month duration and above. We filled all questionnaires at the spot. The exclusion criteria of the study were all questionnaire which were filled with the help of colleague, going through internet, and left incomplete.

After approval from the ethical board of the college, we obtained informed written consent from all the participants. Anonymity of the data was assured to all the participants. All students were approached in their class room five minutes before the completion of lecture before break. They were administered with pretested self-administered questionnaire made after going through books, literature and discussion with neck disability index proforma[12]. We asked both open and close ended questions. The questionnaire was pilot for understanding of the questions and remove the possible bias. The neck disability index is a 10 items questionnaire with every single item has total five score with first statement scored as zero

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to the last statement scores five with minimum score of zero and maximum score of fifty. It has minimal detectable change with 90% confidence interval is 5points or 10 points.

Data was entered and analyzed using SPSS version 21.0. Quantitative variables like age were presented as Mean±SD. Qualitative variable like gender, profession and use of smart device were presented as frequency and percentage. We tested the association of the variable for statistical significance using Chi square and difference was regarded to be significant at 5% level.

RESULTS

Out of total 101 medical student, there were 59(58.4%) were female and 42(41.6%) were male. The mean age of the participants was 24.97±1.572 year. All students were students of 4th and final year M.B;B.S. The mean time since using smart phone was 5.62±3.3957year. Most 49(48.5%) preferred cell phone, 18(17.8%) preferred tablet, 20 (19.8%) preferred laptop and only 14(13.8%) preferred cell phone and laptop for educational and personal use. Approximate time of daily use of all gadgets was 5.57±3.105hourdaily. When they were asked about their preference of establishing connection most 42(41.6%) preferred text message, 33(32.7%) preferred both voice call and text and only 26(25.7%) preferred voice call to others (Table 1).

Table 1: Demographic data, type of gadgets used, duration and social media preference

Variables	n	Frequency(%)
Female Male	59 42	(58.4%) (41.6%)
Age of the Students (Mean±SD)	24.97±1.572year	
Time since using smart phone(Mean±SD)	5.62±3.3957year	
Preferred Gadgets / Technology Cell phone Tablet Laptop Cell phone and laptop	 49 18 20 14	 (48.5%) (17.8%) (19.8%) (13.8%)
Time of daily use of Gadgets or technology	5.57±3.105hour	
Preferred method of establish connection Call Text Call and text	 42 33 26	 (41.6%) (32.7%) (25.7%)

Table 2: Cross tabulation of the age of the students with neck disability index

Variable	Gender of the students	
	Male (n=43)	Female (n=58)
Neck disability index		
No disability	24	37
Mild disability	15	16
Moderate disability	04	05

P value=0.004

It was alarming that majority 61(60.4%) didn't prefer E-reading and 39(38.6%) used gadgets for e-reading. Majority 57 (56.4%) didn't have neck pain and most 44 (43.6%) had neck pain in their lifetime. Majority 63(62.4%) felt continuous stress in neck, most 21(20.8%) had on-off stress and only 17(16.8%) with using cell phone. Only 06 (5.9%) students warmed up their muscles before using smart-phones and majority 95(94.1%) didn't warm-up neck muscle. Only 12(11.9%) used break away from during use of cell phone and majority 89(88.1%) didn't break away to relax while using cell phone. Mean time of break-up in user was 11.8±7.578 mons. When they were asked about type of social media majority 52(51.5%) use Facebook,15 (14.9%) used Whats App, 06(5.9%) Instagram and all were using Face book and Whats App both. Mean time of daily use of social media was 3.207±1.645hours. The neck disability index was calculated. There was no disability (0-4 scores) in 59(58.4%) students, mild disability (5-14 score) 31(30.7%) students and 10 (9.9%) had moderate disability (15-24 scores) (p-value <0.004) (Table 2).

DISCUSSION

In this study we tried find the different factors in undergraduate medical students who use smartphones, tablets and laptops for their educational and personal use. Their daily usage in hours and patterns of using different gadgets in daily life. The practices and disability patterns were also noted. The preferences of communication with other students via call text or social media was also asked to add the evidence to the pain neck in participants. Their awareness about exercise and break-way during prolong use or use with stress was also noted. Smartphones have replaced the laptops and tablets in our daily life. We used them frequently for different communication and reading purposes. It causes flexion in the neck that causes stress in the neck. The contagious forward bending poses risk for early arthritis and change in the neck alignment and may result into permanent damage[13,14]..

In this study, majority 63(62.4%) felt continuous stress in neck, most 21 (20.8%) had on-off stress and only 17 (16.8%) with using cell phone. The findings were similar with cohort using long term excessive cell phone had neck pain [15]. The correlation analysis done by Lee et al[15] with text neck syndrome and neck disability index had no disability (0-4 scores) in 62.92%, mild disability (5-14 scores) in 32.85% population and 1.19% had moderate disability (15-24 scores). While in our study, there was no disability (0-4 scores) in 59 (58.4%) students, mild disability (5-14 score) 31 (30.7%) students and 10 (9.9%) had moderate disability (15-24 scores) (p-value <0.004).

Text neck is a repetitive injury, it can be avoided with frequent break-away while using the smartphone, tablets and laptops. In our study, when they were asked about break-away while using gadgets, only 12 (11.9%) used break away from during use of cell phone and majority 89 (88.1%) didn't break away to relax while using cell phone. it useful to take break every 20mins while using the gadgets in daily life. In this way the stress on neck muscles can be reduced. This may prevent the harmful effect of the text neck syndrome.

In our study population females were affected more than male population. There were 59 (58.4%) female and 42 (41.6%) were male students. The mean age of the participants was 24.97±1.572year. they all were in their adolescent age. This raises the concern of text neck is

becoming the problem that can affect the life afterward. In the start of the problem, it can be managed conservatively without use of medication. The warm up exercises can be helpful in preventing this disabling condition. In our study, only 06 (5.9%) students warmed up their muscles before using smart-hones and majority 95 (94.1%) didn't warm-up neck muscle. Their needs awareness about exercises to warm the neck during prolong use. These exercises can be helpful before using the smartphone.

In our study we didn't measure the flexion angle and could not the add the awareness related to the posture while using the smartphones, tablets and laptops. In future studies with large sample size can be done to generate the evidence that can help in prevention of this condition.

CONCLUSION

Text neck pain was common in female's student with usage of smartphone in daily life. The lack of knowledge about warm up exercise, posture change and break-away while using smart-phone was lacking in most of the students.

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