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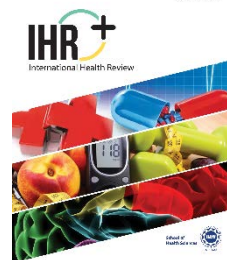
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Title: Attitude and Perspective towards Text Neck Syndrome among University-going Students in Sialkot

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Attitude and Perspective towards Text Neck Syndrome among University-going Students in Sialkot

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Abstract

Text neck syndrome is a stressful injury caused by sustained head bending using smartphones. It usually starts with minor discomfort followed by sharp pain or stiffness in the neck. The primary goal of this study was to determine the attitude and perspective towards text neck syndrome among university-going students in Sialkot. The secondary objective was to determine the level of neck disability among university-going students using NDI. A total number of 377 students of both gender with age 18-25 from various universities of Sialkot participated in this cross-sectional study from October 2021 to March 2022 and a non-probability convenient sampling technique was employed. The questionnaire included socio-demographics, questions regarding text neck syndrome awareness and perspective, and the Neck Disability Index scale. Data were analyzed through SPSS-21. Out of 377 participants, 71.1% were female and 28.9% were male. Most of the students were between the age of 20-22 (n=209, 55.4%). The overall perspective on Text neck syndrome showed that 50.1% have moderate knowledge, followed by 36.6%, and 12.7% have poor and moderate knowledge respectively. Although 51% had neck pain/discomfort, 49.3% had signs and symptoms less than 3 times/day and 41% used to massage and relaxation techniques as relieving methods. This study concluded that the students had moderate knowledge regarding the overall perception of text neck syndrome showing a positive attitude and moderate disability was observed among medical students.

Keywords: forward head posture, neck pain, neck disability index, text neck syndrome

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Introduction

In the modern era, the use of smartphones and gadgets has enormously multiplied. However, technology has its pros and cons as well. One of its consequences is “Text neck syndrome”. The term Text neck was coined by Dr. Dean L. Fishman, a UN agency that could be a North American national therapist. Text neck is a term that has been used to characterize the posture created by leaning the neck forward for a long time [1, 2].

In the public health domain, neck pain can lead to disability, which have a poor impact on everyday functioning. The majority of people who suffer from neck pain do not fully recover and there is a 50%-85% chance that they would have a relapse in the five years following the onset of their pain. Neck pain is also a significant financial burden and one of the leading causes of disability [3, 4]. The World Health Organization (WHO), among all health conditions, ranks neck pain and other musculoskeletal problems 4th and 10th, respectively. Furthermore, according to the WHO Global Burden of Disease report, neck discomfort is the eighth most common cause of disability [5].

Text neck syndrome is complex, with a variety of risk factors contributing to its development and severity. Research conducted by Guzman and his colleagues depicted that psychosocial, demographic, and socio-demographic factors play an important roles in the development of text neck syndrome [6]. Poor posture causes fatigue, which has undesirable consequences such as diminished physiological function, disruption of the autonomic nervous system, shoulder discomfort, stiffness, neck pain, and increased risk of injury [7, 8].

Poor posture has debilitating effects on the human body. Text neck syndrome is nothing else but pain in the neck due to poor posture adopted by the usage of mobile phone devices [9, 10]. If text neck is not treated, it can result in major long-term consequences, such as reduction in the curvature of the spine, arthritis, depression, degeneration of the spine, disc compression, spinal misalignment, headaches, muscle damage, and reduction in lung volume capacity, etc. [11].

Text neck is becoming more frequent among today's young adults, who are continuously hunching their necks or bending over their electronic gadgets, while performing ordinary daily tasks [1, 11]. Text neck is also relatable to the upper cross syndrome [12]. It is mainly the muscle imbalance that can

lead to postural disturbance. Our bodies consist of two types of muscles: postural muscles like the pectoralis major, upper trapezius, and sternocleidomastoid, and phasic muscles like the deep neck flexors and lower trapezius. Muscles that are predominantly static or postural are prone to tightening. They are activated more frequently in various movements than muscles that are principally dynamic and phasic in activity, which are prone to weakening. Forward head posture (FHP), thoracic spine hunching (rounded upper back), elevated and protracted shoulders, scapular winging, and reduced thoracic spine mobility are all symptoms of the upper cross syndrome [9, 13]. According to one of the recent studies, the frequency of text neck syndrome among medical students is reported, which is 93.2% mostly in the young population and females are affected more than the males [4].

Bottaro et al. [14] conducted a systematic review and the results showed that out of 8798 abstracts and titles, 10 full-text articles were considered for the study. According to the overall findings, there was a significant link between upper disorders -non-specific long-term musculoskeletal problems of the neck, and head, which include low back pain- and mood disorders, stress, anxiety, sadness, and insufficient social support, could be a reason for text neck pain. Therefore, there was a correlation between high levels of UD and high levels of psychological illness. The findings backed up the evaluation of both physical and psychological symptoms from a comprehensive standpoint. They discussed text neck syndrome and holistic care.

The survey of medical students of, Diyala University, Iraq conducted by Rashid et al. [15] revealed a high prevalence of neck disability. The most significant predictors of neck impairment were addiction and excessive smartphone use along with a disdain for warming up the neck muscles before use. Excessive use of cell phones among individuals, which causes many neck problems that interfere with daily activities, is the primary reason for addressing this issue and educating the public about the dangers of long-term cell phone use. The current study's objectives were to determine the attitude and perspective towards text neck syndrome and also determine the level of neck disability among university-going students using NDI.

Materials and Methods

The current study employed a cross-sectional study. Participants were students from different universities in Sialkot namely, University of Sialkot, the University of management and technology, and Islam Medical College.

This survey was conducted from October 2021 to March 2022. The sample size was calculated using Raosoft sample size calculator with a 95% confidence interval (CI), 5% margin of error, and considering a response rate of 50%; the minimum number of students required was 377 students. The sampling technique used was non-probability convenient sampling technique. Undergraduate students of different universities of Sialkot, including medical, and non-medical disciplines, with the age of 18-25 and using a cell phone for less than 3 hours, 3-6 hours, and more than 6 hours' duration were included. Participants with a history of any neurological disease, trauma, accident, injury, or any unstable medical condition, with a history of musculoskeletal injury of the neck and lumbar region, and university staff and faculty members were excluded from the study population.

Data Collection Procedure

After the ethical approval letter from the Institutional Review Board and Ethical Committee (IRB & EC), of Islam College of Physical Therapy, Sialkot, data were obtained from students of various universities in Sialkot, through informed consent, and data were collected through a self-design questionnaire and Neck Disability Index. NDI is a 10-item questionnaire that measures a patient's self-reported neck pain-related disability. Before collecting data, permission was obtained from the heads of the relevant institutes. Students were recruited in their classrooms five minutes before the lecture ended or during the break. The height of the participants was measured by measuring tape and the ROM of the neck was measured visually by showing the picture of neck flexion with different angles. A total number of 450 questionnaires were given out among the students of different universities, out of which 400 questionnaires were returned. A total number of 377 questionnaires were filled in completely and considered valid as per the inclusion and exclusion criteria. The concealment and secrecy of the participants were preserved during the study. The data was analyzed using Statistical Package for the Social Sciences (SPSS) for Windows software, version 21. Statistical significance was set at $P=0.05$.

For Descriptive Statistics Frequency tables and bar charts were used in the current study. The Chi-Square test was used to find out the relationship between categorical variables.

Results

A total number of 377 participants were included in this study, of which 71.1% were females and 28.9% were males. Table 4.1 summed up the demographic details of the study showing that the most commonly affected participants with Text neck syndrome were of 19-22 age (55.4%).

Table 1. Demographic Characteristics

	Variable	Frequency (%)
Gender	Male	109 (28.9)
	Female	268(71.1)
Age	Equal and less than 18	74(19.6)
	20-22	209(55.4)
	23-25	89(23.6)
	<25	5(1.3)
	Below 18.5	68(18)
BMI	18.5 – 24.9	15(66.3)
	25.0 – 29.9	48(12.7)
	30.0 – 34.9	9(2.4)
	35.0 – 39.9	1(0.3)
	ABOVE 40	1(0.3)
Academic Discipline	Medical	240(63.7)
	Non-medical	137(36.3)
Duration of using smart devices daily	Less than 3h/day	68(18)
	3-6h/day	154(40.8)
	More than 6h/day	155(41.1)

Table 2. Prevalence and symptoms of Text Neck Syndrome

	Yes n (%)	No n (%)	Total n(%)
“Do you have neck pain when you use mobile phones?”	251 (66.6)	126 (33.4)	377 (100)

	Yes n (%)	No n (%)	Total n(%)
“Have you heard previously about Text Neck Syndrome”	157 (41.6)	220 (58.3)	377 (100)
“Have you been diagnosed with Text Neck Syndrome”	84 (22.3)	293(77.7)	377 (100)
“Do you think you have to reduce your use of smartphones for health reasons”	249 (66.0)	128 (34.0)	377 (100)

Table 2 shows that 66.6% of participants have neck pain while using their smartphones. However, 58.3% of participants have not heard about text neck syndrome previously and around 77.7% of participants have not been diagnosed with text neck syndrome also 66.0% of participants think to reduce the usage of smartphones for health purpose.

Table 3. Awareness about Text Neck Syndrome

	Yes n (%)	No n (%)	Total n(%)
“Awareness about Text Neck Syndrome”	199 (52.8)	178 (47.2)	377 (100)
“Awareness about the relation between wrong posture and Text Neck Syndrome”	238 (63.1)	139 (36.9)	377 (100)
“Awareness about bending the head using smart devices”	235 (62.3)	142 (37.7)	377 (100)
“Awareness about using smart devices in right position”	212 (56.2)	165 (43.8)	377 (100)

Table 3 shows that around 52.8% of participants had awareness about the text neck syndrome and 63.1% of participants were aware about the relationship between wrong posture and text neck syndrome. Additionally, 62.3% of participants are aware about the bending the head in right position and 56.2% of participants are aware about using smartphones in right position.

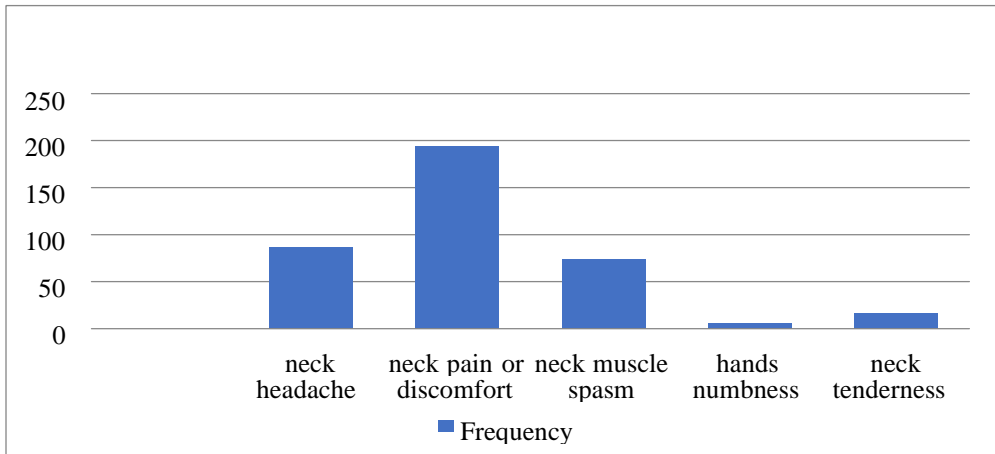


Figure 1. Perspective regarding the most common sign or symptoms of text-neck syndrome

The simple bar chart shows the perspective of TNS signs and symptoms, 51.5% population reported neck pain and discomfort 22.8% with headache, and 19.6% with neck muscle spasms.

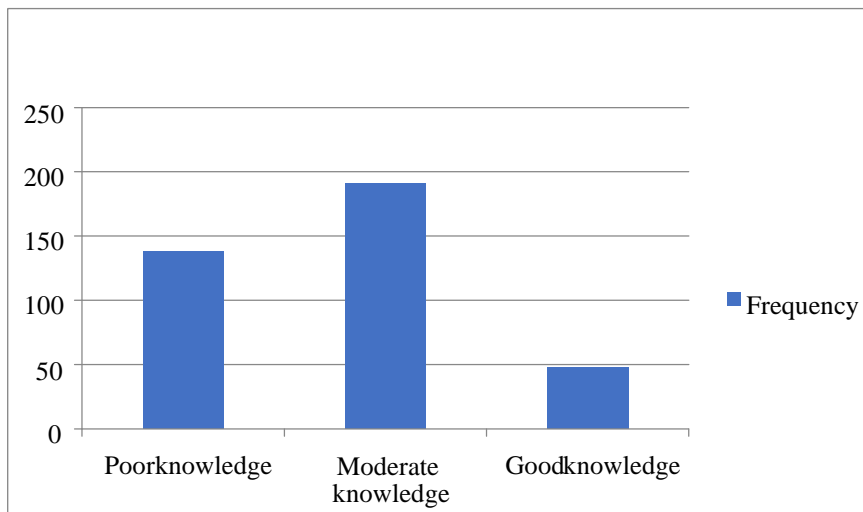


Figure 2. Overall Perspectives toward Text-Neck Syndrome

The simple bar chart shows that 50.7% of participants had moderate knowledge regarding the overall perspective toward TNS

Table 4. Association of Neck Disability Index with Discipline of participants

NDI	Medical n (%)	Non-Medical n(%)	P value
No disability	24 (61.5)	15 (38.5)	0.057
Mild disability	54 (52.9)	48 (47.1)	
Moderate disability	67 (67.7)	32 (32.3)	
Severe disability	40 (75.5)	13 (24.5)	
Complete disability	55 (65.5)	29 (34.5)	

Above table shows that around 61.5% of participants have no disability, 52.9% have mild disability, 67.7% have moderate disability, 75.5 % have severe disability, and 65.5% have a complete disability and these participants belong to medical discipline.

Discussion

Progress in digital technology has enhanced the usage of cell phones for a variety of purposes in recent decades, including work, entertainment, and socialization. However, chronic use of electronic gadgets has been linked to the development of new medical problems. Text neck syndrome is one of these conditions [16].

Our study examined the perspective and awareness towards text neck syndrome among university-going students in Sialkot. Knowledge about Text neck Syndrome has been assessed in previous studies. A cross-sectional study was conducted by Khalid Et al, “Perspective, Awareness, and Behaviour towards Text-Neck among Medical Students of Majmaah University”, in which data were collected from medical participants only [17]. The overall awareness among the participants was 54.6% was positive, while 45.4% were negative.

In contrast to the above study, our recent study was conducted among 377 participants of both medical and non-medical participants, and the overall awareness among the participants was positive and fewer showed a negative response. Contrarily, in this study, both medical and non-medical participants were included and the overall awareness in our study showed more results that are positive. In past, even in medical studies, only 50% had awareness about Text neck syndrome, while among the non-medical students this percentage was relatively low. However, with the most recent

survey, the percentage of both groups has risen to a good number with medical students showing more awareness than those of non-medical.

In the study mentioned above, mostly the participants used the cell phone within 3-6 hours and in the current study, it was reported that mostly the participants used the cell phone for more than 6 hours in a day. Furthermore, Khalid Et al study showed the overall perspective towards text neck syndrome and a maximum number of participants had good knowledge regarding the syndrome, while in the present study, the overall perception towards the text neck syndrome was moderate.

Uzair Nawaz et al. [18] conducted a study that reported the frequency of text neck in Islamabad, in which most participants who used smart devices for more than 3 hours per day suffered from neck pain. Nevertheless, according to the present study, nearly 66% of participants suffered from neck pain, while using smartphones for more than 3 hours per day and about 61% of them were young adults.

Yousaf Ali Abdali et al. [19] conducted a study, “Text neck syndrome prevalence and knowledge among the Saudi population in Jazan” kingdom of Saudia Arabia in which 93% of participants agreed to limit their smartphone usage due to health reasons, while 7% participants disagreed. Conversely, in our recent study, 66% of participants agreed to limit their smartphone usage, while few disagreed. Mostly, the participants were diagnosed in Yousaf Ali Abdali’s study and in contrast to this; the current study found that 22.3% of participants were diagnosed with text neck syndrome, while 77.7% of participants were undiagnosed. Furthermore, he found that more than 60% of the participants believed that text-neck syndrome is preventable but our study showed that 66.3% of participants believed that text-neck syndrome is preventable.

A study conducted by Alzarea et al. [20] “Mobile phone head and neck pain syndrome: proposal of a new entity”, showed that 55% of participants presented with neck pain and headache with prolonged usage of smartphones. Smartphones cause FHP, which leads to postural changes and long-term neck pain. Contrarily, in the current study, most participants suffered from neck pain following shoulder pain and chronic headache and more than 50% of participants were those who suffered from all of these symptoms.

A study conducted by Kholoud T.Alsiwed et al. [21] “The prevalence of text neck syndrome and its association with smartphone use among medical students in Jeddah” Saudi Arabia, showed that most of the students had their neck at 30 degrees, while using smartphones as compared to 0, 15, 30, and 45 degrees [19]. However, in this survey, the majority of participants preferred a 0-degree head position, while using smartphones.

Priyal Shah et al. [22] assessed the scores of NDI showing moderate disability in physiotherapy students with smartphone addiction (30-48%-moderate disability) but in this study, NDI showed moderate disability in 67.7% of medical participants and 32.3% of non-medical participants.

A study conducted by Amal I Elsiddig et al. [23] Prevalence of neck and shoulder pain among Saudi universities students who were using smartphones and computers, showed that 59.1% of participants suffered from neck pain, while using electronic devices and 40.9% of participants do not suffer from neck pain using electronic devices. Contrarily, the present study showed that majority of the participants have neck pain when they use mobile phones, while above 30% were those who don't have neck pain when they use smartphones

During the cross-sectional study, a few biases were identified, which can be avoided in the future by using the following methods. The use of a random sampling method (basic random sampling method) and using standardized questionnaire tools, respectively, eliminate selection bias and response bias.

Limitations

- This study was area bound as only one city was targeted and the sample size was small.
- A self-structured questionnaire was employed.
- Most of the students were unavailable due to exams.

Recommendations

- To achieve the best results, a similar study with a larger sample size including the elder population and a multi-centered design encompassing a larger area can be conducted
- Posture awareness seminars and workshops should be conducted to reduce the harm and negative consequences of prolonged usage of cell phones.

- People should be encouraged to decrease their screen time and take frequent breaks during their smartphone usage.

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