PREVALENCE OF TEXT NECK SYNDROME AMONG UNDER GRADUATE NON-MEDICAL STUDENTS IN SARGODHA

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ABSTRACT

Text neck syndrome occurs due to excessive use of electronic devices resulting in repetitive stress injury. Occurs due to prolong neck flexion at different angles when texting on smart devices for prolong period.

Objective: The purpose of this study was to determine the frequency of text neck syndrome among undergraduate non-medical students in Sargodha.

Methodology: This study was done on colleges with 288 sample size according to inclusion and exclusion criteria. A questionnaire was distributed among students at different colleges by using non-probability convenience sampling techniques. Self-made questionnaire was distributed to all students. Students were assessed by measuring the resting head posture by using a Goniometer. This obtained data was tabulated and statistically analyzed.

Results: Out of 288 non-medical students 56.3% non-medical had <50 CVA angle, and 43.8% had >50 CVA angle. Association between duration of mobile usage (hours) with posture of neck in sitting was checked by using Chi-square test. Results were found to be statistically significant. With regards to this syndrome and pain, this study revealed that CVA angle decrease in those students who used mobile phone for more than 5 hours per day. Results were statistically analyzed by using Chi-square text.

Conclusion: This study concludes that text posture affects upper cervical muscles and ligaments which can lead to spinal deformity. 56.3% of students were affected by neck pain when using mobile phone. There were 61.1% participants who had flexed neck posture in sitting position due to excessive usage of mobile phones.43.8% of the non-medical students who took part in this study had a CVA angle greater than 50, while 56.3%did not.

Index Terms- Text neck, Range of motion, exercises

I- Introduction:

Turtle neck is a term used to describe text neck syndrome. Turtle Neck is a form of persistent neck pain that affects people who use handheld devices like smart phones, laptops, and PCs for extended periods while maintaining poor body posture.(1) The forward head posture may irritate the soft tissues and cervical facet joint. As a result, there is restricted motion in the cervical joint, which causes neck pain.(2) In the United States,72% of people aged 18 to 34 use smart phones for 5.1 hours daily. On the other hand, adults who are university students that are between the ages of 19 and 22 use smart phones for 8.1 hours per day. As much as 40% of people experience neck pain. The World Health Organization listed neck soreness as the fourth most common ailment among those unable to work for 15 to 19 years.(3) Text messaging caused a significantly greater angle of head flexion (p 0.05) than any of the other tasks, and it caused a significantly greater head flexion while seated than standing. According to the study's findings, text messaging is one of the app categories for smart phones that are used most frequently. Text messaging apps could be a primary factor in neck pain in heavy smart phone users.(4)(5) In today's environment, people spend more time on portable devices such as smart phones, computers, tablets, and e-readers. Mobile technology has improved so much, which is the reason for the pain in the neck. "The text neck" is the result of long- term neck flexion while bending over modern electronic gadgets.(6) Text neck syndrome, which causes severe neck pain and muscular spasm in students who study for lengthy periods, is caused by a flexed forward head position. Another reason for severe neck pain is the excessive use of mobile phones.(7) Text neck syndrome is brought on by contemporary technology. It should be referred to as the "pain of the modern era," such as computers, cell phones, and other clever gadgets. The result of this study shows that responders 'neck impairment is more significant compared to the study's conclusion.(8) Mobile Phones could indicate a risk factor for various health issues. Long-term users' issues, each of the signs, and unfavorable no correlation could be established between the effects seen in our investigation and caused exclusively by using cell phones.(9) A Musculo-skeletal ailment called neck discomfort or neck dysfunction, accompanied by physical disability or functional restriction is brought on by poor posture.(10) General aches and pains, postural tiredness in the neck, shoulders, and arms, and ongoing soreness or discomfort in soft tissues can all be signs of neck pain. The aligned neck appears to have a slight lordotic curve. Long-term computer use, rounded-shoulder posture, and poor neck alignment disrupt the natural Lonick's dotty curve, which causes a muscle imbalance. As a result, neck aches are the leading contributing causes of neck pain; according to theory, they are long-term, low-intensity strains and tensions as well as poor posture. Periods of Use of computers, frequency of breaks, key-board operation, computer monitor placement, input device usage, and kind of neck ache in the office. Reaching for the mouse tool ow, Leaning forward to use the computer, too, and some work station flaws can cause neck pain.(11) Many previous study had conducted on text neck syndrome among physiotherapy medical students and general population. The main objective of this study was to fill this gap by using goniometer and neck

disability index to determine the prevalence of text neck syndrome and it is associated risk factors among non-medical students in Sargodha division and general precautionary measures should be taken to prevent this syndrome.

II- Materials & Methods:

A cross sectional study design was used to determine the prevalence of text neck syndrome among undergraduate students and study was conducted in different colleges of Sargodha. The sample size was 288 calculated by using this formula $n=z^2p(1-p)/d^2P=25.4\%=0.25$.[12]

Both male and female students, students who used electronic devices for >5 hours/day [13], who used smart devices in sitting or bad position and willing to participate in research were included. EXCLUSION CRITERIA was Students with fracture, Traumatic injury to the cervical spine, Congenital abnormality and Neurological or cardiovascular problem.[14] Non- probability convenient sampling approach was accustomed to recruit the individuals for the study. Data collection tools were Neck disability index, Numeric Pain Rating Scale for pain and Smart phone addictions scale –short version. After informed consent, questionnaire was distributed among non-medical students for collection of data. This procedure had performed by handout. Data was analyzed through SPSS version 20.2.1 Software for windows.

III- RESULTS

In this cross-sectional observational study 288 non-medical undergraduate students were assessed for text neck syndrome by using convenient sampling technique.

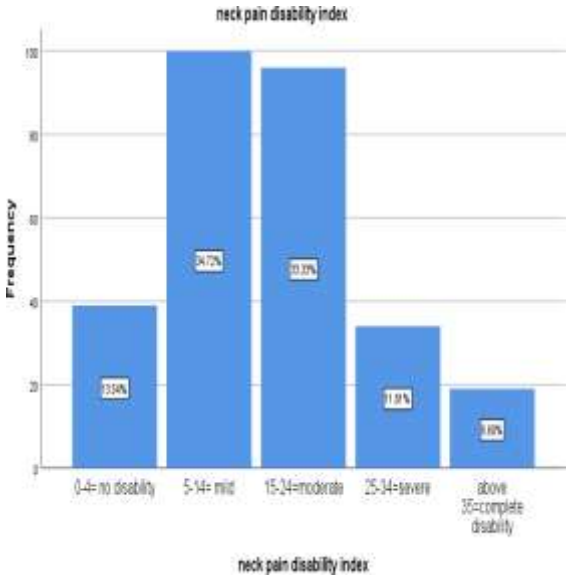

Figure 1: Neck Disability Index:

The data was collected from the non-medical students in Sargodha, and was analyzed by using SPSS. Bio-demographics including age, gender, sex and occupation were included. The mean age of participants was 21.20+/- 2.045. Out of 288 participants 69.79% were female and 30.21% were male. Results showed that 56.3% of students had <50 CVA angle due to text neck syndrome and 43.8% had >50 CVA angle due to text neck syndrome where as normal angle of CVA is equal to 50.

Table 1: Association between Angle and posture of neck Cross:

	Value	Df	Asymptomatic Significance (2-sided)
Pearson Chi-Square	31.406	1	0.000
Likelihood Ratio	31.729	1	0.000
Linear-by-Linear Association	31.297	1	0.000
No of valid cases	288		

The result indicated that 25.7% non-medical undergraduate students participated in this study were using laptop, 64.2% students were using mobile phone and 10.1% students were using personal computer. There were 46.5% non-

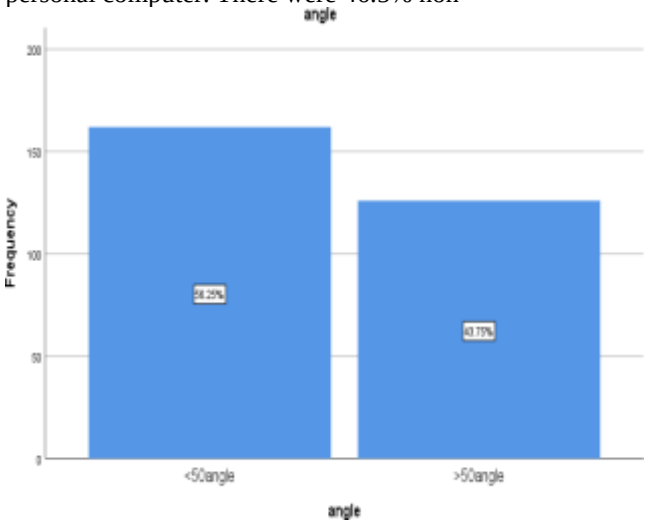

Figure 3: Bar Chart of Craniovertebral angle:

medical students spent <5 hours on electronic devices and 53.5% students spent >5hours on electronic devices.

There were 61.1% participants had flexed neck posture in sitting position due to excessive usage of mobile phone and 38.9% students had extension. 18.1% non-medical undergraduate students participated in this study had pain in shoulder, 54.2% students had neck pain, and 19.1% students had pain in upper extremity and 8.7% students had no pain. 16.0% non-medical students participated in this study had no pain on NPRS scale, 42.4% students had mild pain, and 32.2%students had moderate pain and 9.4% had severe pain on numeric pain rating scale.13.5% non-medical students participated in this study had no disability, 34.7% non-medical students had mild disability, and 33.3% non-

medical students had moderate disability, 11.8% non-medical students had severe disability, and 6.6% non-medical students had complete disability.56.3%non-medical students participated in this study had<50 CVA angle, and 43.8% had >50 CVA angle.

Table 2: Association between Hours and posture of neck

	Value	Df	Asymptomatic significance (2-sided)
Pearson Chi-Square	30.766	1	0.0000
Likelihood Ratio	31.238	1	0.0000
Linear-by-Linear Association	30.659	1	0.0000
No. of valid cases	288	1	

There was significant association of duration of mobile usage (hours) among non-medical students with posture of neck in sitting as p-value <0.05 which was checked by Chi-Square test. There was significant association between CVA angle and posture of neck among non-medical students as p-value <0.05, this showed that the result was significant which checked by Chi-Square test was.

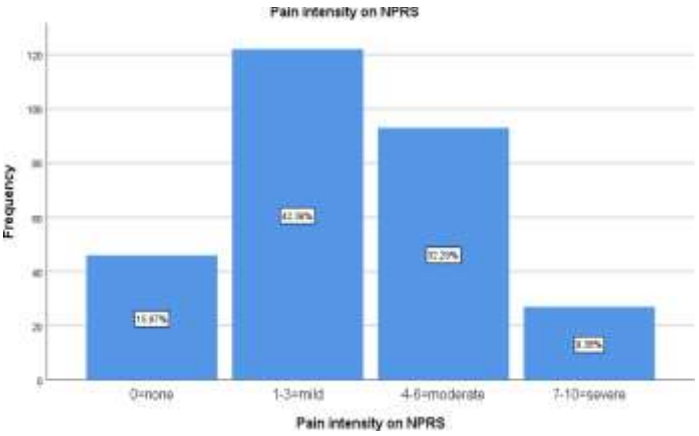

Figure 2: Numeric Pain Rating Scale:

IV- Discussion:

This cross-sectional study was conducted to identify the prevalence of text neck syndrome among undergraduate non-medical students. Text neck syndrome is the type of overuse strain injury that can readily remedied by regularly taking breaks from the smart phones perhaps every 20 minutes or so .you should always be looking up and neck returning to its default state of neutral. The most typical source is neck ache and soreness in text neck syndrome. Additionally prolonged use of smart phones while forward head flexion led to the pain, shoulder pain and limited range of motion.

In previous study 51.8% students sometimes feels neck pain after using their smart phones and 10.7% felt moderate pain when rating on NPRS. These results could attribute those musculoskeletal disorders in young population suggested that neck pain the 4th leading cause of disability. These results support our study results out of 288 students, 16.0% non-medical undergraduate students participated in this study had no pain on NPRS scale, 42.4% students had mild pain on NPRS scale, 32.2% students had moderate pain on NPRS scale and 9.4% had severe pain on numeric pain rating scale.[15] In this current study according to neck disability index the total score is 50 out of which the score in the range (0-4) are considered no disability in which no- medical students participated was 13.5% while 34.7% non-medical students had mild disability and 33.5% student had moderate disability 11.8%students had severe disability, 6.6% medical students had complete disability whereas in previous study conducted to check prevalence of text neck syndrome in young adult population compare to current study where according to neck disability index score range (0-4) 68% young adult had no disability while score range (5-4) 30% population had mild disability, score range (15-24) had 1% population which is considered as moderate disability the score range in range (25- 34) were considered as severe disability and had 1% population, score greater than 35% were considered as complete disability which was present in 0% population.[16] A study conducted by Dalia E Meisha in Saudi Arabia. Prevalence rate of musculoskeletal disorders once determined 70%. Results of neck pain 84.6%. The risk of neck pain increased with age if proper postural was not maintained. In relation to these current study 54.2% students was reported with neck pain. Neck pain was due to poor sitting, sitting posture and ergonomic design chairs.[17] In another study conducted to check prevalence of text neck syndrome and SMS thumb among smart phone users in college going students, disability of neck might be due to frequent neck flexion posture that cause changes in natural curve of spine that increases stress on spine and cause pain in neck musculature. In our study disability of neck among smart phone users causes neck flexion postures due to using mobile phone long period of time result in changes in spinal curve pain in neck musculature.[18] In previous study smaller craniovertebral angle values are indicative of increased degree and severity off onward head posture. This study support current study which reported 56.3% of non-medical undergraduate student had craniovertebral angle greater than 50 due to text neck syndrome whereas normal craniovertebral angle is 50.[19]

RECOMMENDATION(S):
Same study can be conducted in different professions.
LIMITATION(S): only non-medical students included.
Time duration for the data collection was short.

V- Conclusion:

This study concluded that text neck syndrome is most common in this era. The symptoms of text neck syndrome arise in children and adults because of increased usage of mobile phones. Text posture affects upper cervical muscles and ligaments which can lead to spinal deformity. 56.3% of student's were affected by neck pain when using mobile phone. However, there was a significant relation between craniovertebral angle with hours of mobile usage

and craniovertebral angle with posture of neck. More than half of non-medical undergraduate students in a study had pain in shoulder, neck and upper extremity from using mobile phones while sitting down. There were 61.1% participants who had flexed neck posture in sitting position due to excessive usage of mobile phones.43.8% of the non-medical students who took part in this study had a CVA angle greater than 50, while 56.3% did not.

Conflict of Interest

There was no conflict of interest.

Financial Statement

No fundings were given by any authorities; it was a project thesis of doctor of physical therapy.

Data availability

Data will be provided on the demand by corresponding author.

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