



# Frequency of Text Neck Pain in Islamabad

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## Abstract

**Background:** Neck pain is one of the most common musculoskeletal condition and causes most disability. Neck pain with movement coordinated impairments is the most common problem and among them “Text Neck Pain” is most growing epidemiological problem among adult population.

**Methods:** This was the cross sectional study. The sample was collected from different Colleges and Universities of Islamabad. Sample was selected using convenient non-probability sampling technique. Data was collected from 428 individuals of both genders and analyzed through SPSS-21. Individual’s basic demographics name, age, gender etc. and other relevant information was taken through a self-structured questionnaire. Two standard questionnaires were also used for taking statistical data about pain intensity via numeric pain rating scale (NPRS) and level of disability through neck pain disability index (NPDI).

**Results:** The mean age of the research participants was  $22.74 \pm 3.52$  years. The results showed that 35.0% of the smart phone users feel neck pain regularly and 39.5 % of the population sometimes feel pain in the activities of daily life. Results also showed that majority of the population having neck pain use the cell phone in sitting position at an angle of 30-45 degrees of neck flexion for more than 3 hours/day.

**Conclusion:** It is concluded that individuals having more use of smart phones have more text neck pain which is also affecting their activities of daily life. So, it’s the alarming situation for the adults.

**Keywords:** Neck Pain, Text Neck Pain, Smartphone

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## Introduction

Neck pain is the most common musculoskeletal condition and causes restriction in performing daily activities.(1) Neck pain is localized in the region that lies between the lower margin of the mandible above the suprasternal notch and the upper border of the clavicle below. Neck pain with movement associated impairments is the most common problem and “Text Neck Pain” is the most emergent epidemiological problem among adult population.(2) “Text neck” is the term used to describe neck pain

caused by persistent looking down at cell phones, tablets or other wireless devices too frequently and too long (3). In recent era, technology has so much revolutionized that the cell phones have playing a vital role in communication across the globe. About 79% of the population age between 18-44 have got cell phones (4). 87% of teenagers aged (14-18 years) in USA and 79% teenagers (12-15 years) have smart phones in UK (3). Cell phones are now being used by 91% of adults and 35% of cell owners do text messaging (5). In Pakistan cell phone users have reached 150 million with teledensity of 73.28% revealed by Pakistan Telecommunication Authority (PTA). Over 58 million

use social networking Apps such as Facebook, WhatsApp, Messengers and etc. (6). Texting has become the main form of communication. More than 560 billion text messages are sent in a month worldwide (7). The cause of text neck pain is hanging the head for prolonged period of time in a faulty posture. In addition, looking down at smart phone for too long or too much can lead to upper back pain ranging from chronic, nagging pain to sharp pain and severe upper back muscles spasm (8).

As in normal posture the ears tend to be aligned with center of shoulders and head exerts weight of 10-12 lbs. of force over the neck region. When a poor posture is adopted the head goes in a forward flexion, away from neutral position and exerts an additional weight of six times. When head tilts forward it produces considerable load over the spine musculature, neck and shoulder region cause damage to neutral position and restricts neck movements (3).

Varying ranges of head tilt angles produces a profound load on neck (Table.1). Overuse of smart phone can cause overuse syndrome and if left untreated it can cause permanent damage to the musculature, connective tissues and surrounding structures which cause imbalance to stress/strain ratio and produce serious injuries to the neck region (3).

**Table. 1. Magnitude of forces on neck musculature with different angles of neck flexion.**

Angles	Magnitude of force
15°	27 lbs.
30°	40 lbs.
45°	49 lbs.
60°	60 lbs.

## Methodology

It was a descriptive cross-sectional study of six months' duration (January 2018-June 2018). Sampling was done by using non-probability convenient sampling technique. A total of 428 cell phone users of both genders having ages between 18-40 years were included in the study after taking their consent to participate in the study. Individuals with traumatic brain injuries and spinal cord injuries, cervical radiculopathies, congenital cervical dysfunctions were excluded. Individual's basic demographics including name, age, gender, occupation and all the other parameters were taken using a self-structured questionnaire. Level of disability was measured

through Neck Pain Disability Index (NPDI).

The NPDI is a self-report questionnaire with 10-items: pain intensity, personal care, lifting, work, headaches, concentration, sleeping, driving, reading, and recreation. The response to each item is rated on a 6-point scale from 0 (no disability) to 5 (complete disability). Higher scores represent increased levels of disability. The NPRS was used to capture the patient's level of pain. Patients were asked to indicate the intensity of their current pain level using an 11-point scale, ranging from 0 (no pain) to 10 (worst pain imaginable). Both the scales have good reliability and validity as an outcome measure.(9)

Neck angles were measured through goniometry. The data was analyzed on SPSS-21.

## Results

The mean age of individuals was 22.74 ± 3.52 years. Other demographics are stated in the Table 2 below.

**Table 2. Demographics**

Demographics	Frequency (%age)
<b>Gender</b>	
Male	175 (40.9)
Female	253 (59.1)
<b>Marital Status</b>	
Unmarried	377 (88.1)
Married	51 (11.9)
<b>Occupations</b>	
Students	316 (73.8)
Doctors	17 (4.0)
Physiotherapist	25 (5.8)
Engineer	15 (3.5)
Teacher	10 (2.3)
Businessman	14 (3.3)
Employs	24 (5.6)
Housewife	7 (1.6)

Out of 428, 416 (97.2%) individuals were using the smart phones. 150 (35.0%) participants were feeling pain in neck regularly and 169 (39.5%) participants were feeling pain during their daily activities which produce stress to their neck muscles while 109 (25.5%) individuals were feeling no pain at all. Table.3 is showing that the neck pain was more prevalent

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(78.66%) in those who were using cell phones more than 3 hours per day. Those individuals using cell phones in sitting position at neck angle of 30-45° were feeling more pain because it produces more stress on neck musculature. In most of the participants 163 (38.1%) pain was of mild intensity, 135 (32.2%) participants were feeling moderate pain on NPRS. This pain was causing no disability in majority 131 (30.6%) of the population while in 101 (23.6%) participants this pain was causing mild disability on NPDI.

**Table 3. Association of pain frequency with duration of cell phone usage.**

Duration of cellphone usage	Numeric Pain Rating Scale				Total	Percentage of patients feeling pain
	No Pain	Mild (1-3)	Moderate (4-6)	Severe (7-10)		
1 hour	4	5	5	1	15	73.33%
2 hours	9	16	3	1	29	68.96%
3 hours	26	33	20	5	84	69.04%
More than 3 hours	64	109	110	17	300	78.66%

## Discussion

The mean age of the research participants was 22.74 ± 3.52 years. The results showed that 35.0% of the smart phone users feel neck pain regularly and 39.5 % of the population sometimes feel pain in the activities of daily life. Results also showed that majority of the population having neck pain use the cell phone in sitting position at an angle of 30-45 degrees of neck flexion for more than 3 hours/day.

A study conducted by Yang et.al in 2015 on association between smart phone use and musculoskeletal discomfort in adolescent students. The purpose of the study was to identify the correlation of prolonged smart phone use with musculoskeletal discomforts in students of Taiwan Junior College. They concluded that nearly half of the students were suffering from the neck and discomfort by the prolonged hours spent with smart phone use ( $F=6.009$ ,  $p<0.05$ ). The study discovered that relationship of musculoskeletal discomfort and smart phone use is on the duration of the usage (10).

A case control study conducted by Kim in 2015 showed that smart phone causes a change in posture. The participants of both groups were instructed to use the smart phone for 5 minutes in seated position while

the upper and lower cervical angles were measured by Ultrasound –based motion analysis to find out any change regarding posture. It was found that the subjects with mild neck pain in seated position showed greater flexion angles of upper and lower cervical spine. The results suggested that the smart phone users with mild neck pain should be more careful and attain the neutral position while using (11). A comparative study by Lee et al in 2014 measured the different ranges of head flexion while performing different tasks in the smart phone. The study included three different activities of browsing, texting and watching videos with sitting and standing posture. He concluded that individuals in sitting posture while texting used a more forward head posture and bilateral use of thumb for texting purposes which caused an immense biomechanical stress over the musculature of neck and shoulder muscles which caused the symptoms of stiffness and trigger points in the muscles in text neck by that prolonged duration of smart phone use with flexed posture.(12)

## Conclusion

Text neck is prevalent in young population of Islamabad and more frequent in those who are using cell phones for more than three hours/ day. Maintenance of proper cervical spine alignment during cell phone usage and strengthening of neck muscles should be done regularly to avoid further injuries and disability.

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