

**TEXTING ON MOBILE PHONES-ITS EFFECT ON PINCH GRIP****Sumit Kalra\***

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**ABSTRACT**

Despite concern that musculoskeletal symptoms are associated with mobile hand-held device use or excessive use of any gadget in hand. **Purpose:** Is there any significant effect of holding mobile for prolong period on pinch grip. **Conclusion** Frequent use of smartphones may affect hand function and pinch strength, possibly resulting in pain in the thumb. Individuals should be aware of the dangers that may arise from overuse/addiction of smartphones.

**KEYWORDS:** A number of case studies have identified musculoskeletal disorders.**INTRODUCTION**

Despite concern that musculoskeletal symptoms are associated with mobile hand-held device use or excessive use of any gadget in hand. There is a little literature available or lack of knowledge concerning the use and exposures associated with these devices.<sup>[1]</sup> Young adults today have grown up with mobile phones as an evident part of their lives without knowing their effects on their body.<sup>[2]</sup>

A number of case studies have identified musculoskeletal disorders (MSDs) in the forearm and thumb, for example, tendonitis, tenosynovitis, and first carpometacarpal (CMC) arthritis, in relation to excessive texting on a mobile phone (Gordon, 2008; Menz, 2005; Ming et al., 2006; Storr and V. B. F. Stringer, 2007; Williams and Kennedy, 2011) 3 we held the phone with one hand and used only one thumb, implying increased repetitive movements in hand and fingers. leading to stress maximally on thumb consequently repeated stress injury to tendon of thumb.

Now a days one term selfie is getting very common among youngsters. A selfie is a gesture that can send different messages to different individuals, communities and audiences.<sup>[1]</sup> On 13 September 2002, the word "selfie" was first time used in Australian internal forum. 'Myspace' was the common name used for the self taken photograph in the early 2000s. Selfie is becoming a fashionable trend not only among young generation but in all age groups it is a recent type.<sup>[2]</sup>

In april 2014, a man diagnosed with body dysmorphic disorder recounted spending ten hours a day attempting to take the "right selfie", attempting suicide after failing to produce what he perceived to be the perfect selfie.<sup>[2,4]</sup>

In present study we hypothesized that overuse of smart phones may affect the flexor pollicis longus tendon (FPL) and the joints of the thumb. To date, less is known about the possible adverse effects of mobile phone overuse on the hand and thumbs. In a recent study the FPL tendons were found to be thicker in subjects who engage in frequent mobile phone texting.<sup>[5]</sup>

**METHODOLOGY****Inclusion Criteria**

- Females age 18-22 years with smart phone.
- No pain in any of the wrist or elbow in last 3 months.
- Habit of taking selfie with dominant hand on regular basis.

Exclusion Criteria any diagnosed case of musculoskeletal, neurological, dermatological or psychological disorder.

**Procedure**

subjects fulfilling inclusion criteria were taken into consideration, After clearing their doubt, pinch grip of both the hands were taken. Three readings of pinch grip were taken and mean of that was considered for data analysis. Dominant hand was taken by asking subject which hand she uses for writing. A Jamar pinch meter was used to evaluate grip and pinch strengths (kilograms) in the dominant hand, respectively. The participants positioned their arms based on the American Society of Hand Therapists' recommendations while they were seated with the shoulder adducted and neutrally rotated, the elbow flexed at 90°, and the forearm and wrist in a neutral position. Each participant squeezed the handle of the pinchmeter as hard as possible and maintained maximal contraction. This

action was repeated 3 times with 30-second rest periods between trials. The mean score of the 3 trials was calculated. Lower scores indicated reduced pinch strengths.

#### Statistical analysis

Was done using Microsoft excel 2010.

|                   | Mean         | Unpaired t test | P value p < .05. |
|-------------------|--------------|-----------------|------------------|
| Dominant hand     | 5.5(4.4-6.8) | 1.9147          | 0.32899          |
| Non dominant hand | 6.2(4.5-8.6) |                 |                  |

#### DISCUSSION

A number of case studies have identified musculoskeletal disorders (MSDs) in the forearm and thumb, for example, tendonitis, tenosynovitis, and first carpometacarpal (CMC) arthritis, in relation to excessive texting on a mobile phone (Gordon, 2008; Menz, 2005; Ming et al., 2006; Storr and D.V.B.F.Stringer, 2007; Williams and Kennedy, 2011). associations were found between text messaging and reported pain in the neck/upper back, shoulder/upper extremities, and numbness/tingling in the hand/fingers for both men and women.<sup>[3]</sup>

Selfie elbow is actually is a new tech related medical condition that has become a cause of concern for avid self takers across the globe. According to doctors, selfie elbow is much like tennis elbow-a kind of tendinitis. Selfie elbow is also termed as overuse injury Holding phone for several minutes in strenuous posture can cause trauma to the muscle and tendons in the elbow. Abnormal strain leads to inflammation and acute or chronic pain in the elbow. Selfie elbow is another addition to the long list of medical conditions caused by overuse of technology, among teens specially.<sup>[2]</sup>

One may get selfie elbow from taking too many selfies, as you put too much stress on the muscle and it irritates the area where the muscle comes off the bone and you get this inflammatory response," Metzl added. From gaming and chatting to selfietaking, texting and tweeting, there has been a significant rise in injuries in teenagers than before. Tendonitis occurs when the tendon becomes inflamed, while carpal tunnel is caused by the compression of the median nerve in the wrist, usually due to overuse of the hand.

Tenderness is typically localized to the tendinous origin of the extensor carpi radialis brevis. The pain can be aggravated by gripping, heavy lifting, as observed in holding cell phones for long time by extended arm. Chronic symptoms are commonly associated with inadequate muscle power and endurance. Most investigators contend that repetitive and cumulative injury produces this condition. The consequent force overload may be due to factors localized at the elbow

(intrinsic) or the result of factors acting at a distance from the elbow (extrinsic).

The repetitive high moments of force are beyond the adaptive capacity of the tissue with subsequent deterioration occurring<sup>[7]</sup> Smartphone users typically adapt their thumb and hand postures to the constraints of the phone design layout that may impact their performance. Incorrect posture, such as prolonged flexion of the wrist and repetitive use of the thumb, may impact the median nerve and the structures in the hand.<sup>[8]</sup>

In addition, extensive flexion/extension of the thumb and wrist occurs when an individual uses a smart phone, and placing thumbs and wrists in these static postures will likely lead to increased load on these joints and associated muscles and tendons.<sup>[8,9]</sup>

There are several limitations in this study. The limited number of the participants may have Smartphone Overuse MUSCLE & NERVE prevented our ability to identify different significant associations. The lack of information about how and when the students used their smart phones should be taken into account when interpreting the results.

The present study did not examine in detail about any other habits, which may also produce increased pain due to overuse of arm & hand joints and tendons. Such habits may have been the underlying cause of increased pain in movement among subjects in this study, Future studies examining the individuals in detail with regard to their hand-use habits may answer this question.

#### CONCLUSION

Frequent use of smart phones may affect hand function and pinch strength, possibly resulting in pain in the thumb. Individuals should be aware of the dangers that may arise from overuse/addiction of smart phones.

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