

“Text neck pain” and Hand held devices

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Abstract

Objective: The initial objective of this study was to describe the association of musculoskeletal disorders (MSDs) with physical activities.

Methods: A prospective study of 400 individuals was obtained using the self-assessment application, Your Physical Health, developed by physical health insights (PHI). The study was designed to assist individuals in avoiding MSDs related to their activities.

Results: Analysis of the data demonstrated multiple associations between MSDs and individual and activity factors. Of interest was the strong association between head and neck pain and the used of hand held devices.

Conclusions: This study found that individuals reported a higher incidence of hand and neck pain with increasing use of hand held devices. It is important to remember that non-specific pain is not a specific medical diagnosis.

Introduction

“Text Neck” syndrome is a label for neck pain that is commonly described as occurring when adults and children spend long periods of time on their handheld devices like smartphones, e-readers and computer tablets. Constantly leaning your head forward 3 to 4 inches to see the device creates some 40 to 60 lbs of pressure on an adult head weighing 10lbs as reported by Hansraj, chief of spine surgery at New York Spine Surgery & Rehabilitative Medicine [1,2].

Recent figures have shown that around 87% of teenagers (14-18 years) in USA and 79% teenagers (12-15 years) in UK own and use smartphones. Among adults aged 18-34 years, 92% and 95% reported owning a smartphone in USA and Australia, respectively [3]. Dr. Dean Fishman is credited with coining the term “Text Neck” but he says that it is not just a texting problem. Text Neck can occur with mobile devices for gaming and e-mails.² A recent Kaiser Family Foundation study reported 8- to 18-year-olds spend an average of seven and a half hours using “entertainment media” every day [4]. But it’s not just kids. The average amount of data used on a smartphone tripled from 2010 to 2011 according to Cisco Global Mobile Data Traffic Forecast Update with tablet generating 3.4 more traffic than the average smartphone [5].

Additional studies find increasing symptoms in secondary school students and university students compared to a general employment population [6].

Why “Text Neck”?

The average human head weighs 10 lbs in a neutral position often described as when your ears are over your shoulders. For every inch you tilt your head forward, the pressure on your spines doubles. This can result in muscle strain causing neck pain and headaches. Additionally, experts say forward bending of your neck can reduce airflow to your lungs by as much as 30% which can result in decreased oxygenation blood flow [7].

Dr. Bolash of the Cleveland Clinic reported that “Many patients come in complaining they have a headache, but we actually find “Text

neck” is contributing to the frequent headaches”. He further suggested that prolonged use without proper posture can result in early onset arthritis and spinal degeneration. Long term use of mobile devices by children requires adult guidance on the proper use of mobile devices [8].

Material & methods

A prospective study of 400 individuals was obtained using the self-assessment application, Your Physical Health, developed by physical health insights (PHI). Multiple data points were collected. For this specific analysis, age, BMI, computer use, mobile phone (hand held devices), musculoskeletal pain by level and by body region, and biometric body movements (range of motion) were evaluated. Followup assessments were compared to initial assessments.

Results

The PHI study includes 400 Individuals who completed PHI “Your Physical Health” App downloaded from the Apple store. There are 400 individuals with 250 females and 150 males. The age ranged from 11 to 82 with the average age of 48 and a mode of 31. Head and neck pain was reported in 98 of the 400 (25%) and resulted in a pain risk score of medium to high with a range of none to high. Mobile phone (hand held device) use by the 400 persons was reported as 161 constant, 180 frequent and 59 infrequent. Of the 98 reporting neck pain, 75% reported constant use, 25% frequent, and 0% infrequent. The “high level” of neck pain was reported with 80% constant use, 20% frequent use, and 0% infrequent use. “Medium level” neck pain was reported with 75% constant used, 25% with frequent use, and 0% infrequent use.

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Neck pain symptoms were experienced in conjunction with the head forward (Neck Flexion) movement part of the range of motion test for that body region in 90% of constant use, 10% of frequent use, and 0% infrequent use.

Discussion

Multiple studies have reported "Text Neck" findings [12,3,6,9,10]. The use of hand held devices or mobile touch screen devices has increased rapidly over the last decade and there are now concerns that their use may have a negative musculoskeletal consequence.

Although our study found an association between hand held device activity and neck pain, it is important to understand that an association is not a causation. Currently, there are no longitudinal studies to support causation [3]. However, if one is experiencing pain with an activity, activity modification is appropriate.

Text Neck is a symptom complaint, which can be easily relieved or prevented by taking frequent breaks from the mobile device, like every 20 min or so with look up bring the neck back into its original neutral position. Other alternatives are to hold the mobiles/electronic devices higher, so that it is alignment with the eyes and the stress on the neck muscles is reduced. Doing posture focused exercises, such as Pilates and yoga, which aim is gaining the right posture, will reduce the stress on the neck and shoulder.

Conclusion

Text neck is experienced by people of all ages who use hand held devices. As use increased so does symptoms. Multiple therapy programs

have been developed for muscle strengthening and improving flexibility that provide for reduction of pain symptoms. Further prospective studies are recommended to determine the associated risk factors for "text neck".

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