

A Case Study on Text Neck Syndrome and Gamers' Thumb in 10-Year Old Nomophobic Student with Attention Deficit Hyperactivity Disorder (ADHD)

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ABSTRACT

Purpose: A case study was done to assess text neck syndrome and gamers thumb in 10 year old nomophobic student with attention deficit hyperactivity disorder.

Design/Methodology/Approach: The researchers use the descriptive research methodology to understand all the activities required in meeting the objectives of the study. The respondents of the study were a ten years old student with attention deficit hyperactivity disorder who was taken to hospital by his parents for severe neck pain along with thumb and wrist pain. As the objective of the study was to analyze the musculoskeletal disorders in a child due to excessive smart phone use, a face to face interviews as well as the observational analysis of various positions during phone use were employed. Data collected from the study are noted, explained, and analyzed for comparison and further studies. Thorough assessment was taken and it was found that the position of the child while using smart phone was poor and awkward for a long duration of time without following principles of ergonomics.

Finding/Result: Within the limitation of this case study, it is concluded that a nomophobic student with attention deficit hyperactivity disorder has diagnosed with text neck syndrome and gamers thumb due to excessive use of smart phone. There was a lack of awareness about ergonomics and musculoskeletal disorders due to excessive use of smart phone in child's

parents. Thus, the researchers emphasized giving proper guidance in ergonomic principles and ergonomically corrected positions while using smart phones to avoid the risk of musculoskeletal disorders. Originality/Value: An ergonomic dimension of this study.

Paper Type: Case Study Research

Keywords: Ergonomics, Musculoskeletal Disorder, Text neck syndrome, Gamer's thumb, Nomophobia, Attention Deficit Hyperactivity Disorder.

INTRODUCTION

Neck pain is a common health issue that primarily affects adults. Recent studies, however, reveal that new technologies are causing a shift in the prevalence of this important issue from maturity to all ages of children. In reality, excessive and inappropriate use of personal computers, particularly cell phones, may be linked to the development of "Text Neck Syndrome," a complicated collection of clinical symptoms [1]. Physical exposure while using a mobile phone causes bad posture and causes repetitive movements of the hand and thumb to create a variety of symptoms. The most commonly used terms are 'text neck syndrome' and Gamers' thumb' [2]. Dr. Dean L. Fisherman, a Chiropractor in the United States, created the term 'Text Neck' [3]. Text neck

syndrome is a type of repetitive stress injury caused by prolonged neck flexion at various angles and pain from lengthy durations of watching or texting or playing games on mobile devices. As it has very close association with modern age gadgets, it should be called "Modern Era Pain" [4].

Gamers thumb, commonly known as De Quervain's diseases or Mothers thumb [5]. De Quervain's tenosynovitis was first defined in 1895 by Fritz De Quervain as a painful wrist complaint caused by stenosing tenosynovitis of the thumb abductors around the radio styloid process [6]. Thickening of the synovial sheath contains the extensor pollicis brevis and abductor pollicis longus tendons is hypothesized to cause gamers thumb. This causes muscle irritation, resulting in pain, and swelling on the patient's radial side of the wrist [5,7]. Pain is caused by the abductor pollicis longus and extensor pollicis brevis tendons moving against each other in the fibro-osseous canal [8]. It's accompanied by a greater inability to hold stuff. This painful ailment may be the result of activities that entail frequent thumb pinching and wrist movement.

Smart phone usage is increasing now a day, especially during the covid times. According to statistics, more than 80% of students use cell phones for 5-6 hours per day, with the most active users interacting with their devices virtually constant [9,10]. Smart phone gamers are crucial for maintaining compulsive Smartphone behaviors [11]. Young people responded by stating that their primary reason for using cell phone is for entertainment [12]. But it can lead to numerous psychological and physical issues [13]. Nomophobia (NMP) is known as addiction of smart phones, in which there is a fear of not using it [14].

The link between signs of attention deficit hyperactivity disorder (ADHD) and video game addiction has been seen in children and adolescents, however it is unclear [15]. The association between signs of attention deficit hyperactivity disorder and video game may play may be bidirectional and needs to be explored

further. More studies have been conducted by some researchers in 2018 among teens and data of preschool children is essentially non-existent [16]. ADHD is the most common psychopathology in video game addiction [17], and its risk factor for addiction in general [18]. The aim of the study was to assess text neck syndrome and gamers thumb in a nomophobic student with attention deficit hyperactivity disorder.

CASE REPORT

A 10 year old, male student was brought to government health care hospital for head ache, pain and stiffness on neck along with wrist pain. While interviewing his parents, it was known that he was born prematurely on 7th month and was in NICU for more than three weeks. And he was diagnosed for meningitis and was under treatment for that. Parents and teachers noticed his impulsive character along with hyperactive and inattentive nature when he was five years old. He used to run, climb, and jump from height. In order to make him sit quietly, parents taught him some games in the smart phone and gradually he became addicted to that. His teachers also started complaining about his inattentive nature and restlessness in class.

During covid 19 pandemic, schools tend to shut down and all classes were through online platform. This period made him more addictive to the use of smart phone and games. He spends more than six hours daily in phone and started experiencing insomnia. He used to complain about neck pain long before, which subsides after applying pain relief gel and hot fermentation. But two weeks before, he was having severe neck pain with stiffness; intermittent head ache and shoulder pain. Also, complains off pain and stiffness with thumb and wrist movements. He was not getting relief with pain gel and he was getting more irritated and hyper active. So parents took him to hospital for his difficulties. Doctor thoroughly assessed, and gone through personal history, physical examinations and done all blood routine

checkups which was normal in values. Doctor was asked for MRI of cervical spine and it showed C4-C5 level protrusion and cervical lordosis. Doctor performed Jackson's Compression test which produced pain in neck and trapezius muscle. He was having clicking and popping sensation in right hand thumb which is commonly seen in gamers. His wrist range of motion was also limited. Thumb movements were restricted due to pain. Therapist performed Finkelstein test, which came out positive. His thumb and wrist pain used to travel till arm after long hours of video gaming and smart phone use. Physiotherapist did a rapid assessment on neck and upper limb loading in mainly in phone use with Rapid Upper Limb Assessment tool (RULA). After performing many tests and his addiction to gaming and smart phone usage, doctor concluded it as text neck syndrome with Gamer's thumb in 10 years old nomophobic student with attention deficit hyperactivity disorder.

Doctor prescribed anti-inflammatory drugs, splint for thumb and advised for rest. He referred the kid and his parents for counseling. Asked for physical therapist and occupational therapist help for further assistance. They advised to play a shorter time, encouraged more outdoor games, and gave awareness on importance of stretching before playing games and during breaks. Physiotherapist taught him exercise and postural corrections especially while using Smartphone. Brain gym exercises, and ergonomics and postural awareness were taught. With the medications, advises and exercises, he was showing better improvement after four weeks of review.

ANALYSIS AND DISCUSSION

We have used a descriptive research methodology to assess and analyze all the activities which could help to meet the aim of the study. The respondents of the study were a ten years old student with attention deficit hyperactivity disorder who was taken to hospital by his parents for severe neck pain along with thumb and wrist pain. As

the objective of the study was to analyze the musculoskeletal disorders in a child due to excessive smart phone use, a face to face interviews as well as the observational analysis of various positions during phone use were employed. Data collected from the study are noted, explained, and analyzed for comparison and further studies. Thorough assessment was taken and it was found that the position of the child while using smart phone was poor and awkward for a long duration of time without following principles of ergonomics. Musculoskeletal disorder was assessed by Rapid Upper Limb Assessment tool and score was 6, and which indicates the need for further investigation and changes. After evaluation, it was clear that neck pain, wrist and upper back was the most affecting areas. Immediate postural correction while using smart phone, limiting screen time, increasing outdoor game activities along with conventional treatment was prescribed. In future, while doing ergonomic interventions for smart phone users, these aspects should be taken into account.

CONCLUSION

Within the limitation of this case study, it is concluded that a nomophobic student with attention deficit hyperactivity disorder has diagnosed with text neck syndrome and gamers thumb due to excessive use of smart phone. There was a lack of awareness about ergonomics and musculoskeletal disorders due to excessive use of smart phone in child's parents. Thus, the researchers emphasized giving proper guidance in ergonomic principles and ergonomically corrected positions while using smart phones to avoid the risk of musculoskeletal disorders.

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