

ORIGINAL ARTICLE

FREQUENCY OF CERVICOGENIC HEADACHE IN STUDENTS DUE TO USAGE OF SMART DEVICES - CROSS SECTIONAL SURVEY*Sara Aabrooⁱ, Sidra Shafiqueⁱⁱ, Ayesha Javedⁱⁱⁱ, Attiya Fatima^{iv}, Omaima Khan^v, Shumaila Riaz^{vi}***Correspondence**Sara Aabrooⁱ**ABSTRACT**

Background: Cervicogenic headache is not a primary headache and the pain is originated from posterior part of the neck and radiate towards the front of head and ipsilateral eye which can last from few hours to days Due to extreme usage of smart devices there is persistent stress on the cervical spine because of repeated flexed position of head and neck and this position can cause musculoskeletal stress and also contribute to restriction in neck and head movement, lack of sleep quality and lethargy.

Objective: To determine the frequency of cervicogenic headache in students due to usage of smart phone devices.

Methodology: It was a cross-sectional study. In which frequency of the cervicogenic headache was measured due to the high usage of smart devices. Convenient sampling technique was used. Sample size of 200 students was calculated from Rao soft calculator.

Results: Among 200 total participants, out of which 43 were males and 157 were females. 60 participants ranged from the age of 18 to 21 years whereas, 122 ranged from the age of 22 to 25 years and 18 had the age of 26 to 30 years. 21% participants strongly disagreed that use of smart devices is addictive while, 30% strongly agreed to the statement. Cervical flexion rotation test reported that, out of 200 participants, 112 were positive while 88 were negative.

Conclusion: Cervicogenic headache is more common in female university students as compared to male and it is due to the poor posture adopted and excessive use of smart devices.

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Conflict of Interest: The author (s) have no conflict of interest regarding any of the activity perform by PJR.

Keywords: *Post traumatic headache, university, students, headache disorders, TMJ, TMD, CFRT.*

Introduction

Cervicogenic headache is not a primary headache and in this headache pain is originated from the posterior part of neck and radiate towards the front of head and ipsilateral eye which can last from a few hours to days¹. Cervicogenic headache and migraine both are common headache disorders and their symptoms are also overlapping and thus rendering difficult diagnosis². Migraine is the most common neuromuscular disease that affects people's quality of life and causes social and economic burdens^{3,24}. Assessment tools are used for the evaluation which shows a clear clinical association between TMJ joint dysfunction and cervicogenic headache⁴. Cervicogenic headache is a syndrome that is different from migraine and tension type headache⁵. People with cervicogenic headache showed a decline in quality of life as well as decline in their physical capacities^{6,25}. Due to extreme usage of smart devices there is a persistent stress on the cervical spine because of repeated flexed position of head and neck and this position can cause musculoskeletal stress and also contribute to restriction in neck and head movement and lack of sleep quality and lethargy⁷. Excessive usage of smartphone causes forward flexion posture of the neck which in turn causes false impact on the extensor muscles of the neck and its adjacent connective tissues⁸. The increase of forward head posture at alarming rate especially among young adults is worrisome. Hence, there is a need for a study to determine the early intervention in preventing the faulty posture⁹. Most headaches are related to the excessive use of mobile phones. To determine the cause of occurrence and early intervention to combat faulty posture¹⁰. With the passage of time, smartphone has become more and more popular in every age group of people for education and fun purposes when using smartphone for prolonged period people usually maintain flexed position of cervical spine and this position causes several problems¹¹. Now a days smart phone has become more like personal computer. The smart phone release harmful rays of electromagnetic field and unfortunately due to excessive usage of smartphones, human health is getting affected by this rays¹². Uncontrolled usage of mobile phone causes many health related issues like tiredness, poor vision, lack of concentration, headache, sleep deprivation and prolonged forward head posture causes upper back muscles to become deformed with the passage of time due to sustained poor posture^{13,21,23}. Due to constant incorrect posture adapted while using smart phone leads to bad posture. This increases the pressure on neck, back ligaments and structures leading to many problems in breathing pattern hence it show the relationship between neck pain and breathing¹⁴. People with cervicogenic headache are treated with spinal manipulative therapy including both mobilization and manipulation¹⁵. The cervical flexion rotation test (CFRT) exhibits the strongest diagnostic accuracy and high reliability for the diagnosis of cervicogenic headache^{16,22}. To determine the frequency of cervicogenic headache in students due to usage of smart phone devices.

Methodology

It was a cross-sectional study. In which frequency of the cervicogenic headache was measured due to the high usage of smart devices. Non-Probability convenient sampling technique was used. Duration of the Study was conducted in six months after the approval of synopsis. Data was collected from Riphah International University, Lahore, University of Management and technology (UMT), Lahore and University of Lahore. The printed copies of questionnaire were distributed to all 200 students living in Lahore and were asked to be available for the physical examination.

The Inclusion Criteria

- (1) Students with cervicogenic headache more than 5 days/month.
- (2) Students with positive cervical flexion rotation test.
- (3) Students who are 18-30 years old. The Exclusion Criteria was Students who are diagnosed with migraine and those Students who are not willing to participate. The Data was collected by using a 10-item scale which determined the smart phone addiction level of participants. Cervical Flexion Rotation Test is a physical test which was also performed by a certified professional on each patient. Sample size of 200 students was calculated from Rao soft calculator. Approximately 4 months after approval of synopsis.

Analysis

Analysis was done through SPSS (Statistical Package for Social Science) version 21. Descriptive statistics were used to present the data in tables. Demographic data were entered and their frequencies were described. Smart phone addiction scale (SAS-SV) was used and for cervicogenic headache cervical flexion rotation test (CFRT) was used.

Age	18 to 21 year (60) 22 to 25 year (122) 26 to 30 year (18)
Gender	Male (43) Female (157)
BMI	Underweight (54) Normal (117) Overweight (23) Obese (6)
Semester	1 to 5 semester (54) 6 to 10 semester (133) Graduated (13)

Table 1

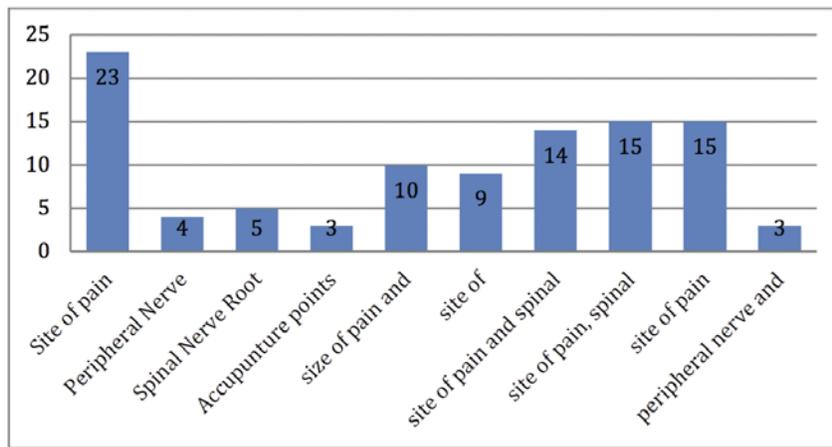


Figure 1: Missing planned work due to smartphone use

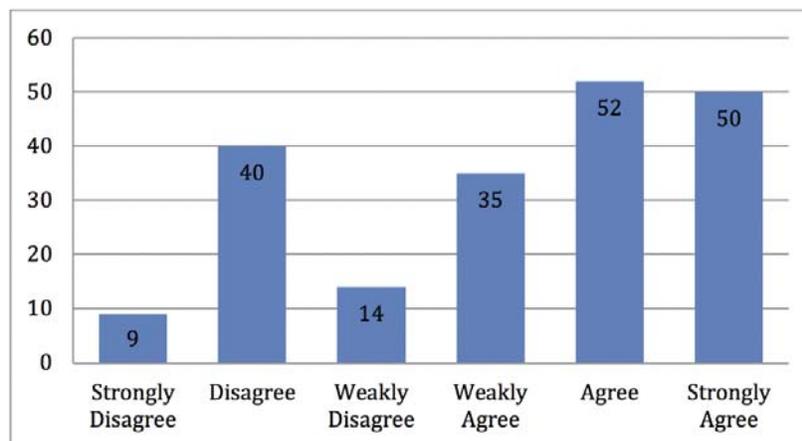


Figure 2: Having a hard time cohcentrating in class, while doing assignments or while working due to smartphone use

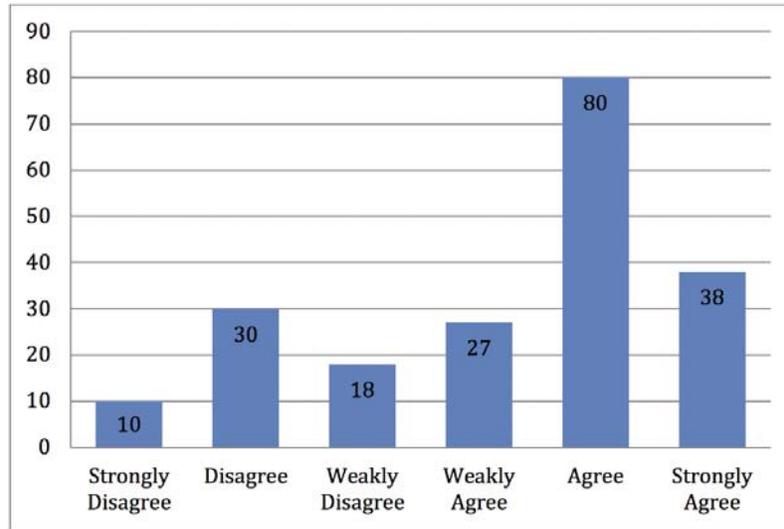


Figure 3: Cervical rotation test

Results

Total 200 university students participated in this study. Out of 200 students 60 were from the age of 18 to 21 years, 122 were from the age of 22 to 25 years and 18 were from the age of 26 to 30 years. Out of 200 students 43 were the males and 157 were females. Out of 200 students 21 were strongly disagreed that they used smart devices very frequently, 50 students only disagreed and 16 students weakly disagreed. While 34 students were weakly agreed, 49 were agreed and 30 were strongly agreed. According to cervical flexion rotation test total participants 200 from which 112 were positive and 88 were negative.

Discussion

Lam K, Peolsson A, et al in 2021 conducted a cross-sectional study that showed a clear clinical association between TMJ joint dysfunction and cervicogenic headache. Their results showed a clear clinical association between painful TMD (pain related and mixed TMD) and cervicogenic headache³. Current study concluded that CFRT for cervicogenic headache is 112 were positive and 88 were negative out of 200 students. In 2020 another study was conducted the purpose of this study was to investigate cervicogenic headache in 81 dentists. Their results showed that 26.73% dentists had cervicogenic headache¹⁷. Current study evaluated cervicogenic headache and relate it with smart devices. In 2019 another study was conducted to investigate the cervicogenic headache or forward head posture. They concluded that 76% students suffered from the forward head posture⁵. Current study concluded that 112 suffered from cervicogenic headache. In (2019) another study was conducted to assess the incidence of cervicogenic headache they concluded that that there is 13.6 percent incidence of cervicogenic headache^[18]. Current study concluded that incidence of cervicogenic headache is positive in 112 individuals. In (2019) another study was conducted with the purpose to examine the preclinical symptoms TMJ disorders in 22 patients with episodic cervicogenic headache versus asymptomatic control. The conclusion was, those patients who have episodic cervicogenic headache present with the signs of preclinical TMJ disorders¹⁹. Current study concluded the exact frequency of cervicogenic headache in those people who were having headache and its relation with smart devices. In (2018) another study was conducted to investigate the clinical characteristics of headache in adolescents aged 11 to 16 years. They concluded that the average duration of headache was 8 years²⁰. Current study concluded that the average duration of cervicogenic headache was 23 years.

Conclusion

We concluded that the frequency of cervicogenic headache for CFRT (cervical flexion rotation test) is 112 were positive and 88 were negative among 200 students. It is founded that cervicogenic headache is more common in female students due to poor posture and excessive use of smart devices as compared to male university students.

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¹Lecturer, Riphah University Lahore campus (0000-0001-9283-3090)²Student, Riphah University Lahore campus (0000-0003-4228-1691)³Student, Riphah University Lahore campus (0000-0002-4108-1172)⁴Student, Riphah University Lahore campus (0000-0002-5624-4632)⁵Student, Riphah University Lahore campus (0000-0003-4579-2200)⁶Student, Riphah University Lahore campus (0000-0001-9406-0132)