



TO STUDY PREVALENCE OF COMPUTER VISION SYNDROME AMONG UNDERGRADUATE STUDENTS OF GMC JAMMU.

Ophthalmology

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ABSTRACT

Introduction: In the modern era, computers are an essential tool to perform everyday tasks at work and at home. Computers are an essential part of our everyday life. American Optometric Association defined computer vision syndrome as a complex of eye and vision related problems related to near work experienced during computer use. More and more people are experiencing ocular and extraocular symptoms related to computer use like eyestrain, headache, blurred vision, dry eyes, neck/back ache – collectively known as Computer Vision Syndrome which is a widely spreading and largely unknown occupational hazard. This study is aimed to determine the prevalence of computer vision syndrome among undergraduate medical students, to assess the most commonly associated symptom, associated risk factors. **Material and methods:** Cross sectional study was conducted among 250 undergraduate medical students of GMC Jammu. Study was conducted over a period of 6 months from March 2022 to August, 2022. Questionnaire was circulated among undergraduate students of GMC Jammu. The response was recorded and analysed. **Results:** A total of 250 students participated in the study. The prevalence of computer vision syndrome came out to be 86%. Association of duration of computer use and visual symptoms was noted. Symptoms were more in people who did not use anti-glare glasses. Most frequently reported ocular symptoms were excessive tearing, dryness, itching and so on. Most frequent extraocular symptom found was neck and shoulder pain. **Conclusions:** Visual problems constitute an important part of computer vision syndrome. This warrants vigilance in identifying and effectively treating this condition. The study has also thrown light on various ergonomic factors contributing to its occurrence. Effective management requires a multidirectional approach combining health education, modification of ergonomics and appropriate ocular therapy.

KEYWORDS

Asthenopia, Computer vision syndrome, Ergonomics, Health education.

1. INTRODUCTION

In this modern generation, the use of computers became an essential tool to perform everyday tasks at work and also at home. Development of technology in education made a noticeable transformation in the methods of teaching, presenting information, and sources for studying. However, this convenient lifestyle still raised a health-related concern [1]. Among the health-related aspects is a condition known as computer vision syndrome (CVS).

American Optometric Association (AOA) defined computer vision syndrome as “a complex of eye and vision problems related to near work experienced during computer use.” Almost 75% of a person's daily activities include computer usage [2]. Globally, around 60 million computer workers experience discomfort from CVS [3].

Development of Artificial Intelligence is greatly affecting human lives making us more and more dependent on it. University students including medical students are spending more time staring at the screen for studying and for research work. Normally we blink for about 15 times in one minute. Blinking is very essential as it reforms the tear film which breaks up before the blink. Blinking occurs involuntarily without our knowledge. During computer usage, the blink rate falls down, as we are focusing on the monitor. This reduced blinking exposes the eye surface to environment for more than normal time. Thus, the tear film gets evaporated, leading to dryness.

Computers have significantly impacted our cognitive, social, physical and various other aspects of the modern daily lives of computer users, especially among internet users. Our life is inseparable from the internet, e.g., chatting, online shopping, gaming, video conferencing, and emailing. Symptoms of CVS include headache, blurred vision, eye fatigue, strain to eye, neck pain, dry eyes, diplopia, polyopia, difficulty in refocusing the eyes.

The aim of this study was to determine the prevalence of CVS among undergraduate medical students, associated risk factors, most commonly associated symptoms. The aim of the study was to find out the prevalence of computer vision syndrome among undergraduate medical students and to find out the most common symptoms and risk factors associated with it.

2. MATERIALS AND METHODS

A cross-sectional study conducted included 250 undergraduate medical students of GMC Jammu over a period of 6 months. CVS symptoms are categorized into ocular and extraocular. Ocular

symptoms include dry eyes, red eye, burning sensation, foreign body sensation, blurred vision and increased sensitivity to light, excessive tearing, itching, ocular pain, change in visualizing colors, and double vision. Extraocular symptoms include headache; neck, shoulder, or back pain; and numbness of the hands or fingers [4].

Questions were asked regarding various symptoms, duration of computer or phone use to the medical students and data was collected. Data were analyzed using Statistical Package for Social Sciences (SPSS v21).

3. RESULTS

A total of 250 students participated in the study and 215 students were reported to have many positive symptoms of computer vision syndrome. A prevalence of about 86% is noted of CVS among undergraduate students. In our study, 48.8% students were females and 51.2% were males. Various ocular symptoms were noted of which the most common was excessive tearing (30.6%) followed by itching (28.9%), dryness (20.3%), redness (20%), pain (8.4%) and then foreign body sensation (1.8%).

Extraocular symptoms were also noted of which most common was neck and shoulder pain (41.2%) followed by headache (32.4%) followed by numbness of hands and fingers (14.8%). Risk factors associated with it were longer duration of computer use, wrong posture of students, using computers and phones without adequate breaks, using computers and phones at night time. The results of our study are as under:

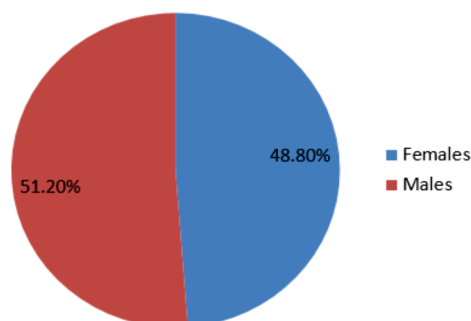


Figure 1: Showing percentage of males and females included in the study.

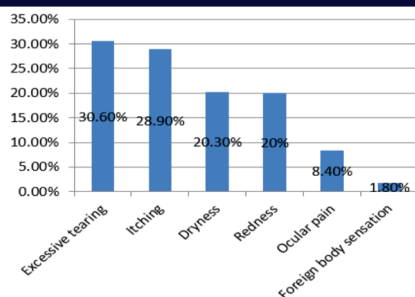


Figure 2: Frequency of ocular symptoms of computer vision syndrome. Excessive tearing was the most commonly reported symptom.

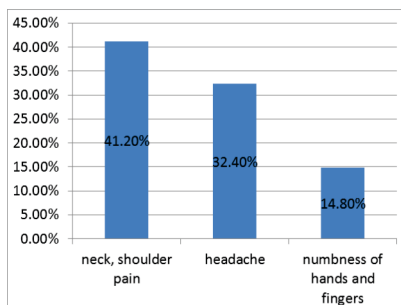


Figure 3: Frequency of extraocular symptoms of computer vision syndrome. Neck, shoulder, or back pain was the most commonly reported symptom.

4. CONCLUSION

Computer vision syndrome (CVS) is very common among undergraduate medical students, with excessive tearing, and neck, shoulder, or back pain being the most common symptoms. Study has shown that the development of CVS is associated significantly with the following risk factors: , longer duration of computer use, short distance from the screen, and higher brightness of the screen. Most significant preventive measure taken by students was applying the 20-20-20 rule followed by proper location of the screen. Although there is no risk of permanent visual impairment, it has been proved that CVS-related symptoms reduce the productivity of work. As universities continuously develop their educational methods, there is a need to raise awareness among students regarding health effects related to prolonged computer use for studying and explain preventive measures in order to reduce CVS symptoms

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