Int. j. adv. multidisc. res. stud. 2024; 4(6):314-316

Received: 28-09-2024
Accepted: 08-11-2024

International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

Assessment of Computer Vision Syndrome (CVS) Among Students

[1] Saurabh, [2] Dinesh Selvam S

[1] B.Sc. Nursing, Amity College of Nursing, Amity University, Manesar, Panchgaon, Haryana 122412, India
[2] Principal and Professor, Amity College of Nursing, Amity University, Manesar, Panchgaon, Haryana 122412, India

DOI: https://doi.org/10.62225/2583049X.2024.4.6.3438
Corresponding Author: **Saurabh**

Abstract

Extended digital screen usage poses considerable health risks, with approximately 70% of users experiencing Computer Vision Syndrome (CVS). The prevalence of CVS among students varies globally, with reports of CVS affecting up to 90% of users. This study aims to assess CVS prevalence among students at Amity University, Manesar, and examine associations between CVS and demographic factors. Using a quantitative descriptive survey design, data was gathered from 50 students through structured questionnaire. Results indicate that 20% of participants are confirmed cases of CVS, 14% are at high risk, and 26% at low risk, underscoring a pressing need for awareness and preventive strategies.

Keywords: Computer Vision Syndrome, Digital Eye Strain, CVS, Screen Time, Student Health

Introduction

Digital technology has become essential in daily life, especially among students. American Optometric Association (AOA) defines computer vision syndrome (CVS) as "Complex of eye and vision problems related to near work, which are experienced during or related to computer use." With the increase in screen time, issues like Computer Vision Syndrome (CVS) have become prevalent, characterized by eye strain, headaches, and visual discomfort. Some of the common causes of Computer Vision Syndrome include screen glare, inadequate lighting, bad posture when sitting, incorrect monitor positioning, and untreated vision issues. Everyone who spends more than two hours a day using computers or other digital devices, including tablets, iPads, and smartphones, runs the risk of developing Computer Vision Syndrome.

According to global research, nearly 60 million individuals suffer from CVS, with a million new cases annually. Previous studies indicate that CVS affects between 64% and 90% of computer users, depending on the demographic, setting, and duration of screen exposure. It was found that 1 in 5 among Indian students reported symptoms of CVS with more than 40% of them spending 2 to 4 hours on computer daily. One in five was found to be affected by symptoms of CVS.

Objectives of the Study

1. **To assess** the prevalence of Computer Vision Syndrome (CVS) among students.
2. **To identify** common CVS symptoms experienced by the students.
3. **To analyze** the association between CVS and demographic factors, including age, gender, average screen usage, and screen usage purpose.

Materials and Methods

A quantitative research approach and descriptive survey design were employed in this study. Data was collected from 50 students through non-probability purposive sampling technique. non-probability purposive sampling technique. CVS-Q tool was used to collect the data related to CVS among students. The CVS-Q, a validated tool, was used to assess the presence and severity of CVS symptoms. It included questions on visual complaints (e.g., blurred vision, eye strain), ocular surface complaints (e.g., dry eyes, redness), and extra-ocular complaints (e.g., headache, neck pain). The visual complaints, ocular and non-ocular surface complaints and the association of screen time with complaints was also assessed. The formal permissions from the authorities were obtained. Written consent was obtained from the participants before the data collection.

Results and Discussion

In relation to the demographic characteristics, with regard to age, 74% of students were between the age of 21-23 years, 22% were between the age 18-20 years, 4% were between age 24-26 years, with regard to gender 26 (52%) of students were female and rest of 24 (48%) were male. With regard to the average number of hours spent on computer screens, the majority (30%) were on computer screens for up to 4 hours, 26% for more than 6 hours, 24 % for up to 6 hours, 20 % up to 2 hours. Regarding the purpose of screen usage 35 (70%) use screen mostly for entertainment and 15 (30%) for academic purpose. About the presence of any refractive error, the majority 54% have no refractive error, and 30% with myopia and 16% with hypermetropia. About the use of glasses or contact lenses during screen usage 26 (52%) don't use glass or contact lenses and 24 (48%) use glasses or contact lenses during screen use.

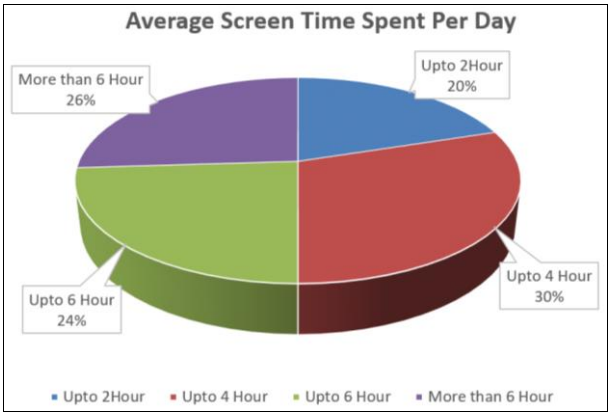

Fig 1: Pie Chart Showing Percentage Distribution of Students Average Screen Time Spent per day

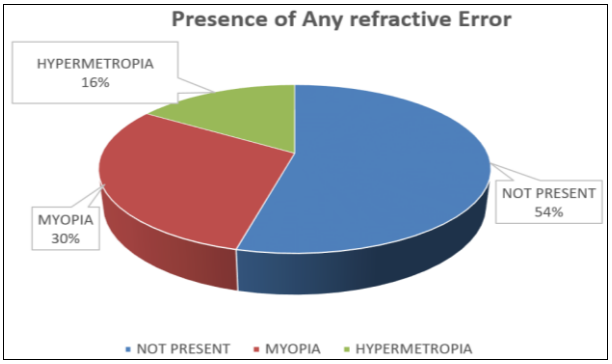

Fig 2: Pie Chart Showing Percentage Distribution of Presence Refractive error among students

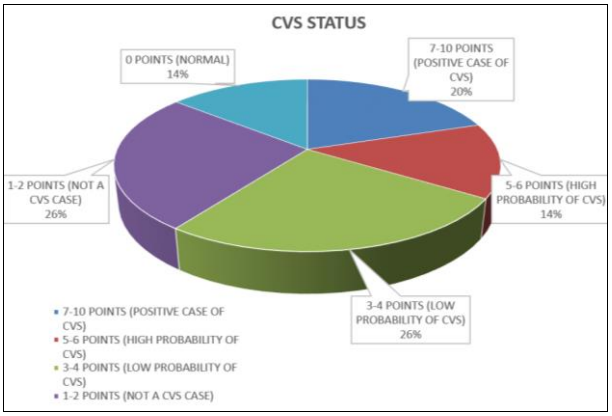

Fig 3: Distribution of CVS Status Among Participants

Fig 3: Shows the distribution of CVS cases among the students, 20% were confirmed cases, 14% were at high risk, 26% had a low probability, and the remaining 40% were unaffected.

Table 1: Frequency and Percentage Distribution of CVS Symptoms

CVS Symptom	Frequency	Percentage (%)
Headache	15	30%
Eye strain	18	36%
Blurred vision	13	26%
Neck and shoulder pain	20	40%
Dry eyes	12	24%

Table 1 highlights the most common CVS symptoms reported, with eye strain and neck pain among the highest reported.

Major findings of the study were: Among the subjects, 20% were confirmed cases of CVS, 14% were at high risk, and 26% at low risk, and significant screen time associated with entertainment. Key symptoms included visual complaints, and a notable 52% did not use corrective eyewear while engaging with screens. There was a significant association between the average number of hours spent on screen time and presence of any refractive error with the CVS Score.

Conclusion

The findings highlight a significant prevalence of CVS among students, indicating a need for increased awareness and educational initiatives on preventive measures for digital eye strain. These findings underscore the importance of implementing preventive strategies, such as regular breaks, eye exercises, and ergonomic adjustments, to mitigate CVS symptoms among students. Educational institutions should be modified and set up to be eye-friendly with proper lighting, locations of electronics materials in appropriate angle. Computer vision Syndrome (CVS) should be considered as an emerging health issue, and its effect on vision should be observed.

The study is relevant as it provides insight into the health impacts of digital device use among young adults, a population at high risk for CVS due to extensive digital exposure.

Acknowledgment

We extend gratitude to the faculty and administration at Amity University, as well as all study participants, for their support and cooperation throughout this research.

References

1. Kaiti R, Shah P, Bogati B, Shyangbo R, Dahal M, Hamal B. Computer vision syndrome: Is it being diagnosed and managed properly? Acta Sci Ophthalmol. 2020; 3(7):13-20.
2. Akinbinu TR, Mashalla YJ. Impact of computer technology on health: Computer Vision Syndrome (CVS). Medical Practice and Reviews. 2014; 5(3):20-30.
3. Barthakur R. Computer vision syndrome. Internet Journal of Medical Update. 2013; 8(2):1-2.
4. Kemp S. Digital Around the World, Data Reportal. Available from: https://datareportal.com/global-digital-overview.

5. Mohan A, Sen P, Shah C, Jain E, Jain S. Prevalence and risk factor assessment of digital eye strain among children using online e-learning during the COVID-19 pandemic: Digital eye strain among kids (DESK study-1). Indian Journal of Ophthalmology. 2021; 69(1):140.
6. En Qing, Seah ED. Digital Eye Strain. Plano Website, 2019. Available from: https://plano.co/eye-conditions/digital-eye-strain/