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The Prevalence and Perception of Computer Vision Syndrome among Engineering Students

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Abstract

In present era, computer became a part of life and prolonged exposure to computer screen can put a real strain on our eyes and disturbance in musculoskeletal system. This is called "computer vision syndrome."

Objectives: To assess the prevalence and level of perception of computer vision syndrome among engineering students, to find the association between prevalence of computer vision syndrome among engineering students and selected demographic variables and find the association between perception regarding computer vision syndrome among engineering students and selected demographic variables.

Methodology: The study covered 100 computer science engineering student from AISAT Engineering College, Ernakulam. Data was collected using g a checklist and Likert scale.

Results: Prevalence of computer vision syndrome was 77%. Out of 100 sample, 89% of sample had poor perception and 11% had good perception regarding computer vision syndrome. There was an association between prevalence of computer vision syndrome among engineering students and selected demographic variables like year of and type of device used and there was no significant association between perception regarding computer vision syndrome among engineering students and selected demographic variables.

Conclusion: computer vision syndrome was found to be very frequent among the computer science students, which emphasizes the need to adopt some preventive measures to avoid the conditions.

Key words: Computer vision syndrome • Perception • Prevalence

Introduction

Nowadays, many of us have jobs that require us to stare at computer screen for hours at a stretch. Computer screen are in rampant use not only at workplaces, office and academic institutions but also there is a usage common even at recreational places and homes. This prolonged exposure to computer screen can put a real strain on our eyes. Eye problems caused by the usage of computer fall under the heading computer vision syndrome (CVS). It isn't one specific problem. Instead, it includes a whole range of eye strain and pain. Computer vision syndrome include extra ocular complaints like back pain, tension, headache and psychosocial stress1 [1].

The American Optometric Association defines computer vision syndrome is a group of eye and vision related problems that result from prolonged computer use, e – readers and cell phone use. Most commonly reported visual complaints include redness, dry eyes, burning sensation and ergonomic problems or musculoskeletal related complaints include tingling of fingers, cervical stiffness, backache, and headache.2Symptoms of computer vision syndrome are broadly classified into four categories [2]:

- Asthenopic: sore eyes, eye strain, tired eyes
- Ocular surface related: dry eyes, watery eyes, irritated eyes
- Visual: blurred vision, slowness of focus change, double vision, presbyopia
- Extra ocular: neck pain, back pain, shoulder pain and headache.
- The computer vision syndrome is otherwise known as repetitive strain injury (RSI) or Digital Eye Strain (DES). 3

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Objectives:

- To assess the prevalence of computer vision syndrome among engineering students.
- To assess the level of perception of computer vision syndrome among engineering students.
- To find the association between prevalence of computer vision syndrome among engineering students and selected demographic variables.
- To find the association between perception regarding computer vision syndrome among engineering students and selected demographic variables [3].

Materials and methods

- Research approach: Quantitative research approach.
- Research design: Descriptive survey design.
- Setting of the study: Albertian Institute of Science and Technology (AISAT) Engineering College, Kalamassery, Ernakulam.
- Study population: Computer science students.
- Study tool: Checklist and Likert scale.

p = 0.44 (According to study conducted Mani S, Menon M, Harishankar, Mathew A regarding the prevalence of computer vision syndrome among information technology students.12).

Inclusion criteria the study included engineering students who are in Computer Science discipline and aged between 17 and 25 years.

Exclusion criteria the study exclude the engineering students who are absent during the period of data collection and not willing to participate in the study [4].

Tool/ instruments Tool 1 Consist of Section A: Demographic profile of the sample. Section B: Check list to assess the prevalence of computer vision syndrome. Tool 2: Likert scale to assess the perception of computer vision syndrome.

Data analysis The data was collected and compiled in MS Excel sheet and analyzed by using SPSS version 20.0. Descriptive statistics was used. Chi square test was applied to know the association between two variables [5].

Results and Discussion

Socio demographic profile		Frequency (%)
Age in years	17 – 19	40
	20 – 22	59
	23 – 25	1
Gender	Male	61
	Female	39
Year of study	Second year	49
	Third year	31
	Fourth year	20
Type of device used	Computer	2
	Laptop	4
	Smartphones	54
	All the above	40
Year of usage of electronic device	1 – 2 years	6
	2 – 4 years	22
	4 – 6 years	16
	More than 6 years	56
Duration of electronic device usage per day	1 – 2 hrs.	13
	3 – 4 hrs.	34
	5 – 6 hrs.	26
	More than 6 hrs.	27
Use of anti – glare coated spectacles	Yes	11
	No	89

Table 1: Socio demographic profile of study subjects (n = 100).

Table 1 shows the Socio demographic profile of study subjects (n = 100). Out of 100 sample, 59% of the sample were aged between 20 and 22 years. Regarding gender, 61% were male and 39% were female. Regarding year of study, 49% were second year, 31% were third year and 20% were fourth year students. Regarding the type of device used, 54% had smart phone usage, 4% had laptop usage, 2% had computer usage, and 40% students had all electronic devices. Regarding years of duration of electronic device, 56% used for more than 6yrs, 22% used for 2 to 4yrs, 15% used for 4 to 6yrs and 7% used electronic device for 1 to 2 years. Regarding duration of usage of computer per day, 34% used computer for 3 to 4hrs. Regarding usage of anti –glare coated spectacles while using computers, 89% of sample did not use any anti–glare coated spectacles.

Conclusion

The present study was done to assess the prevalence and perception of computer vision syndrome among engineering students. The study revealed that majority of the sample had computer vision syndrome. In case of perception regarding computer vision syndrome, majority of sample had poor perception regarding computer vision syndrome. There was an association between prevalence of computer vision syndrome among engineering students and selected demographic variables like year of study. Hence the null hypothesis rejected and research hypothesis accepted. There was no association between perception regarding computer vision syndrome among engineering students and selected demographic variables. Hence the null hypothesis accepted and research hypothesis rejected. The conceptual frame work utilized for the study was Health belief Model Rosen stock and Becker and Maiman (1988). The expert's opinions and direction from the guide and help from engineering college authorities made the study worthful.

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