

A Study to Assess the Knowledge and Attitude of Adolescence Regarding Computer Vision Syndrome in Selected School Of Dehradun, India

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ABSTRACT

Background: Computer Vision Syndrome is one of the rising health concerns related to technology (cell phones and tablets) due to continuous use of computers among adolescents. Almost 75% of a person's daily activities include computer usage. Globally, around 60 million computer workers experience discomfort from Computer Vision Syndrome. Nearly 45 million workers use computers by starring at the screen for hours continuously.

Objectives: The objective of this study is to assess Knowledge and Attitude of Adolescence Regarding Computer Vision Syndrome in Selected School of Dehradun, India.

Methodology: A quantitative, descriptive, cross-sectional research design is used for this study. The total sample size for the study was 120 adolescents. Non-probability convenience sampling technique was used for the study. The collected data were analyzed and interpreted using descriptive and inferential statistics using SPSS (Version 20.0) software.

Result: More than half of the respondents (50.8%) had inadequate knowledge and it revealed that highest 69.2% of them had a negative attitude on computer vision syndrome. There is a significant association between knowledge score with the selected variables like age in years, education and types of electronic device. There is a significant association between attitudes with the area of residence. There is also a positive correlation between knowledge and attitude ("r" value of 0.519).

Conclusion: More than half of respondents had inadequate knowledge and it also revealed that majority of them had a negative attitude on computer vision syndrome.

KEYWORDS

Attitude, Computer Vision Syndrome (CVS), Knowledge Video Display Technology (VDT)

INTRODUCTION

The Occupational safety and health administration department of the US Governmentt. OSHA has defined Computer Vision Syndrome as a "complex of eye and vision problems that are experienced during and related to computer use; it is a repetitive strain disorder that appears to be growing rapidly, with some studies estimating that 90% of the 70 million US workers using computers for more than three hours per day experience Computer Vision Syndrome in some form (Bali et al., 2007).

The symptoms are due to ocular (ocular-surface abnormalities or accommodative spasms) and/or extra ocular (ergonomic) etiologies and common symptoms includes dry and irritated eyes, eye strain/fatigue, blurred vision, red eyes, burning eyes, excessive tear secretion, double vision, headache, light or glare sensitivity, contact lens discomfort, slowness in changing focus, changes in color perception, and neck, shoulder and backache (Gangamma et al., 2010).

On an average, more than 50% of the work force now uses a computer on the job and nearly 60 million people experience vision problems as a result Syndrome (Arumugam et al., 2014).

Computers are widely used in important offices, research institutions, universities, companies and government agencies by almost all employees, both administrative staff and field officers. Occupational diseases caused by computer use must be considered carefully so that their utilization can really increase work productivity. The National Institute for Occupational Safety and Health in the United States says that around 90 % of people who spend 3 hours or more a day on a computer can cause Computer Vision Syndrome (Bali et al., 2007).

METHODOLOGY

A Descriptive, cross-sectional research design was used for the study. Permission was obtained from the principal SGRRU, college of nursing, Patel Nagar, Dehradun. Formal written permission was obtained from the administrative authority of the School. The study was conducted in Sri Guru Ram Rai Public School Patel Nagar, Dehradun, India. The sample size was 120 and were selected by non-probability purposive sampling technique. The purpose and nature of the study were explained to the subjects and assent was obtained from each respondents. Structured knowledge questionnaire was used to assess the knowledge and likert scale tool was used to assess the attitude among the respondents. The data was collected by self-administered questionnaire. The average time of data collection time was given approximately 30 -40 minutes to fulfill the response. Content validity of the tool was maintained by consulting the tool with the expert and reliability of the tool was assessed after pre-testing the questionnaire in 10% of sample size in the same school among 12 respondent and the respondent was excluded for the main study.

RESULT

The research findings shows that the highest percentages of the student's age (25.8 %) were in the age 15 years. The highest percentages of the student's gender (55 %) were female. The highest percentages of the student's education (28.3 %) were from standard 10. The highest percentages of the student's family types (61.7 %) were from the nuclear family. The highest percentages of the student's socioeconomic status (87.5 %) were from middle socioeconomic status. The highest percentages of the students' areas of residency (85.8 %) were from urban areas. The highest percentage of the student's siblings (50.8 %) had

one sibling. The highest percentage of types of using electronic devices (90%) was mobile. The highest percentages of student’s reasons for using electronic devices (84%) were used for education purposes.

Knowledge scores revealed that (50.8 %) of students had inadequate knowledge regarding computer vision syndrome, and only 9 % had inadequate knowledge regarding computer vision syndrome.

Attitude level shows that 69.2% (82) had a negative attitude level, and 30.8% (37) had a positive attitude toward computer vision syndrome. The mean score is 1.31, and SD is 0.464.

There is a significant association between knowledge score and age in years, education and electronic device types. There is a significant association between attitude in the Area of residency and the number of siblings.

The r-value of 0.519 states a “positive correlation” between the knowledge and attitude of adolescents regarding computer vision syndrome.

Table 1: Knowledge of adolescent regarding computer vision syndrome

n=120		
Level of knowledge	Frequency	Percentage
Inadequate	60	50.8%
Moderate	50	41.7%
Adequate	9	7.5%

Table 1 represents that majority 50.8 % of students had inadequate, 41.7% of students had moderate and least 7.5% of students had adequate knowledge on computer vision syndrome.

Table 2: Attitude of adolescents regarding computer vision syndrome

n=120		
Variables	Frequency	Percentage
Negative	83	69.2%
Positive	37	30.8%

Table 2 represents that 69.2% (82) had negative attitude and 30.8% (37) had positive attitude on computer vision syndromes.

Table 3: Association between Socio-demographic variables and level of Knowledge

n=120				
Variables	Frequency	Percentage (%)	Chi-square value (x) ²	P value
Age in years				
12	3	2.5%	23.321	<0.001*
13	21	17.5%		
14	30	25.0%		
15	31	25.8%		

16	13	10.8%		
17	18	15.0%		
18	4	3.3%		
Gender				
Female	66	55%	4.221	0.121 [#]
Male	54	45%		
Education				
Grade 8	25	26.7%	35.921	<0.001 [*]
Grade 9	14	17.5%		
Grade 10	16	28.3%		
Grade 12	6	27.5%		
Family types				
Nuclear family	74	61.7%	8.429	0.208 [#]
Joint family	36	30.0%		
Extended	8	6.7%		
Single parent	2	1.7%		
Socioeconomic status				
Low socioeconomic status	2	1.7%	3.470	0.482 [#]
Middle socioeconomic status	105	87.5%		
Upper middle socioeconomic status	13	10.8%		
Upper	00	00%		
Area of residency:				
Urban	103	85.8%	0.511	0.775 [#]
Rural	17	14.2%		
Number of sibling:				

One	61	50.8%	13.153	0.107 [#]
Two	32	26.7%		
Three	11	9.2%		
More than three	6	5.0%		
None	10	8.3%		
Types of using electronic device				
Mobile phone	108	90.0%	15.073	0.020 [*]
Computer	8	6.7%		
Ipad/tablet	3	2.5%		
Video games	1	2.5%		
Video games				
Reason for using electronic devices				
Education	84	70.0%	4.771	0.573 [#]
Games	16	13.3%		
Movies	8	6.7%		
Others	12	10%		

* Significant at $p < 0.05$ level # Not significant at $p > 0.05$ level

Table 3 represents association (p value < 0.05) with knowledge. There was significant association between age in years ($p < 0.001$), education ($p < 0.001$) and types of using electronic device ($p = 0.020$). Further no significant between years, Gender ($p = 0.121$), Family types ($p = 0.208$), Socioeconomic status ($p = 0.482$), Area of residency ($p = 0.775$), Number of sibling ($p = 0.107$), Reason for using electronic devices ($p = 0.573$)

Table 4 Correlation between knowledge and attitude of adolescents regarding computer vision syndrome n=120

Variables	R value	Level of correlation
Correlation between knowledge and attitude	0.519	Positive

Table 4: represents that **r-value of 0.519** which states a positive correlation between the knowledge and attitude of adolescents regarding computer vision syndrome.

DISCUSSION

The study showed that 60 of the students (50.8%) had inadequate, 50 students (41.7%) had moderate, and the least nine students (7.5%) had adequate knowledge of computer vision syndrome. A similar study reported that 42.9% of respondents lack knowledge about Computer Vision Syndrome and only 15.4% of respondents had a good level of knowledge about Computer Vision Syndrome (Irawaty et al., 2021).

The present study demonstrated that 69.2% (82) had a negative attitude level, and 30.8% (37) had a positive attitude toward computer vision syndromes. Similarly, Tafese et al (2018) conducted a study on Assessment of Knowledge and Practice of Computer Ergonomics among Secretaries and Data Processing Workers in the University of Gondar, Northwest Ethiopia. The study concluded that even though the workers had good knowledge, their practices were below the mean score.

In present study, association between knowledge and selected demographic variables like age in years ($p < 0.001$), education ($p < 0.001$) and types of using electronic device ($p = 0.020$). Furthermore, there was no significant association between years, gender ($p = 0.121$), family types ($p = 0.208$), socioeconomic status ($p = 0.482$), area of residency ($p = 0.775$), number of sibling ($p = 0.107$), reason for using electronic devices ($p = 0.573$). A similar study was conducted on "knowledge, attitude and practice of computer vision syndrome among staffs that use video display terminal in a faculty of a Malaysian Public university" the p-value for age, ethnicity, educational level, and contact lenses user are statistically significant (Amirul et al., 2015).

CONCLUSION

The study concluded that majority of the respondent had inadequate knowledge and the respondent has negative attitude towards the Computer Vision Syndrome.

RECOMMENDATIONS

A similar study may be conducted on a larger sample for wider generalization. An experimental study can be conducted for further study. The study should be conducted in different settings and comparative study can be done as well.

LIMITATIONS

The study is limited to only the age having 10 – 19 years. The sample size is only 120. Assessment of knowledge is limited to the questionnaire, which is not standardized. The study was not experimental. Results cannot be generalized because of individual differences and bias. The study is limited to students who are willing to participate.

CONFLICT OF INTEREST

There is no any conflict of interest with this study.

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