

# A Descriptive Study to Assess the Knowledge on Computer Vision Syndrome and Each Associate Risk Factor Among School Going Children

R Sindhu Priya<sup>1</sup>, S Lidiya<sup>2</sup>, M Maheswari<sup>3</sup>

## How to cite this article:

R Sindhu Priya, S Lidiya, M Maheswari/A Descriptive Study to Assess the Knowledge on Computer Vision Syndrome and Each Associate Risk Factor Among School Going Children/Community and Public Health Nursing. 2022;7(3):115-119.

## Abstract

“Computer visional so known syndrome” as digital eye strain, describes a group of eye and vision related problems that result from prolonged computer use in higher secondary school at Porur. The present study was aim to assess the knowledge on computer vision syndrome and each associate risk factors among school going children. A quantitative approach with descriptive research design was adopted for the present study. This study has sample size of 100 school going children of 12-17 years old and simple random sampling technique was used. A self structured questionnaire method was used as a tool to assess the level of knowledge on computer vision syndrome and each associated factors of computers among school going children. The study findings revealed that out of 100 samples 6.2(6.2%) of children have inadequate knowledge, 31.3(31.3%) of children have moderate knowledge and 62.5(62.5%) of children have adequate. Hence the findings of present study concluded, this study incontestable that the level of knowledge on computer vision syndrome was found to be Porur, Chennai. Monthly wage, daily exposure time, sort of work and information were the foremost determinant factors for computer vision syndrome thus optimizing the exposure time and up the awareness of users. By faculty going students and management support are vital to eye drawback. Within the future, it's counseled to work out the additive impact of exploitation computers on CVS on or off operating time.

**Keywords:** Computer vision syndrome; School going children; Assess; Knowledge.

**Author's Affiliations:** <sup>1</sup>Clinical Instructor, <sup>2,3</sup>B.Sc Nursing Final Year Students, Department of Community Health Nursing, Saveetha College of Nursing, SIMATS, Thandalam, Chennai, Tamil Nadu 602105, India.

**Corresponding Author:** S. Lidhiya, B.Sc Nursing Final Year Student, Department of Community Nursing, Saveetha College of Nursing, SIMATS, Thandalam, Chennai, Tamil Nadu 602105, India.

**E-mail:** [Sindhupriya.scon@saveetha.com](mailto:Sindhupriya.scon@saveetha.com)

**Received on:** 16.05.2022 **Accepted on:** 26.06.2022

## INTRODUCTION

Even A worldwide data show nearly 60 million people suffering from CVS and 1 million new cases occurred each year. Computer vision syndrome (CVS) is the leading occupational hazard of the 21st century and its symptoms affect nearly about 70 percent of all computer users. Duration of computer usage, poor lighting, glare, screen brightness, vision problems, and improper workstation setup are risk factors for CVS.<sup>1</sup> South Asian region has



undergone rapid socioeconomic and technological development for past few decades. Owing to rapid advancement in science and technology, computer has become integral part of everyday life. Excessive use of technology has led to increase prevalence of CVS with resultant loss of productivity and hampered quality of life.<sup>2</sup> Ocular complaints of computer users have been grouped together and collectively termed as computer vision syndrome (CVS). It is defined by the American Optometrists Association as "a group of eye problems related to activities, which stress the near vision and which are experienced in relation or during the use of visual display terminals." Blurred vision and headache are the main symptoms resulting from improper use of computers.<sup>3</sup> Long duration of computer usage has led to "Computer Vision Syndrome (CVS), upper limb symptoms, back pain and psychosocial stress (Richardson and Sen., 2007, Zairian and Attica, 2009). Computer Vision Syndrome has been reported as one of the most common complaints among computer users who used computer monitor (Singh and Wada, 2006, Alexis and Gregory, 1997).<sup>4</sup> Eyes have been rightly described as the 'windows of the world' and the so global initiative known as 'Vision 2020' refractive errors especially myopia, have been increasingly becoming common with increase in close-up work being cited as one of the reasons.<sup>5</sup> A Video Display Terminal (VDT) is commonly known as computer screen. The computer has become a common item in today's society. It is estimated that approximately 45 million workers directly use computers by staring into VDTs for hours continuously. Computers have increased the work efficiency and communications and have

opened access to information like never before.<sup>6</sup> The Occupational Safety and Health Administration department of the US Govt. (OSHA) has defined eye and vision problems that are experienced during the 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 U.S workers using computers for more than three hours per day experience CVS (Nielsen et al., 2005).<sup>7</sup> Accordingly, it is clear that the economic impact of CVS is extremely high, and minimizing symptoms that reduce occupational efficiency will result in substantial financial benefit. It should also be noted that both national and international regulations have been issued with regard to health and safety requirements for workers using VDTs to minimize these disorders.<sup>8</sup>

## METHODS AND MATERIALS

The quantitative approach with descriptive research design was used in this present study. The population of the study included 100 school going children of 12-17 years old and purposive non-randomized sampling technique was used. A self structured questionnaire method was used as a tool to know the knowledge and associated risk factors of computer vision syndrome among school going children. The instrument consists of two parts, section A has Socio demographic variables includes Age, Sex, Education, Religion, Types of family and section B has 20 questions, for the correct answer, the score was given as 1 and for the wrong answer the score was given 0 the total score was given 20 and data collection was done and analyzed by descriptive and inferential statistics.

## RESULTS AND DISCUSSION

**SECTION A:** Description of the demographic variables among school going children Table 1: Frequency and percentage distribution of demographic variables among school going children.

S. No.	Demographic Variable	Frequency	Percentage
1	<b>Age (in years)</b>		
	(a) 12-13 years	-	0%
	(b) 14-15 years	18.8	18.8%
	(c) 16-17 years	81.3	81.3%
2	<b>Gender</b>		
	(a) Male	12.5	12.5%
	(b) Female	87.5	87.5%
3	<b>Religion</b>		
	(a) Hindu	62.5	62.5%
	(b) Christian	31.3	31.3%
	(c) Muslim	6.2	6.2%

S. No.	Demographic Variable	Frequency	Percentage
4	<b>Education status</b>		
	(a) Middle education	-	0%
	(b) High education	25	25%
	(c) Higher secondary school	75	75%
5	<b>Place of residence</b>		
	(a) Urban	62.5	62.5%
	(b) Semi Urban	37.5	37.5%
6	<b>Monthly income of father</b>		
	(b) Below Rs: 5000	6.2	6.2%
	(c) Between Rs: 5000-15000	43.87	43.87%
	(d) Above 15000	c	50%
7	<b>Type of family</b>		
	(a) Nuclear family	56.3	56.3%
	(b) Joint family	43.7	43.7%

Table 1: shows that regarding age out of 100 sample (0%) samples comes under the age group of 12-13 years, (18.8%) were under the age group of 14-15 years, (81.3%) were under the age group 16-17 years. Regarding Gender (12.5%) were males, (87.5%) were females. Regarding religion (62.5%) were Hindu, (31.3%) were Christian, and (6.2%) were Muslim. Regarding education status (0%) was middle education, (25%) were high education and (75%) were higher secondary school. Regarding place of residence (62.5%) were living in urban, (37.5%) were living in

semi urban. Regarding monthly income (6.2%) were earning below Rs: 5000, (43.8%) were earning between Rs: 5000-15000, and (50%) were earning above 15000. Regarding type of family (56.3%) were belongs to nuclear family, (43.7%) were belongs to joint family.

Section B: Assessment of level of knowledge on computer vision syndrome, among school going children.

Fig. 1: shows that out of 100 samples 6.2 (6.2%) of children have inadequate knowledge, 31.3 (31.3%) of children have moderate knowledge and 62.5 (62.5%) of children have adequate.

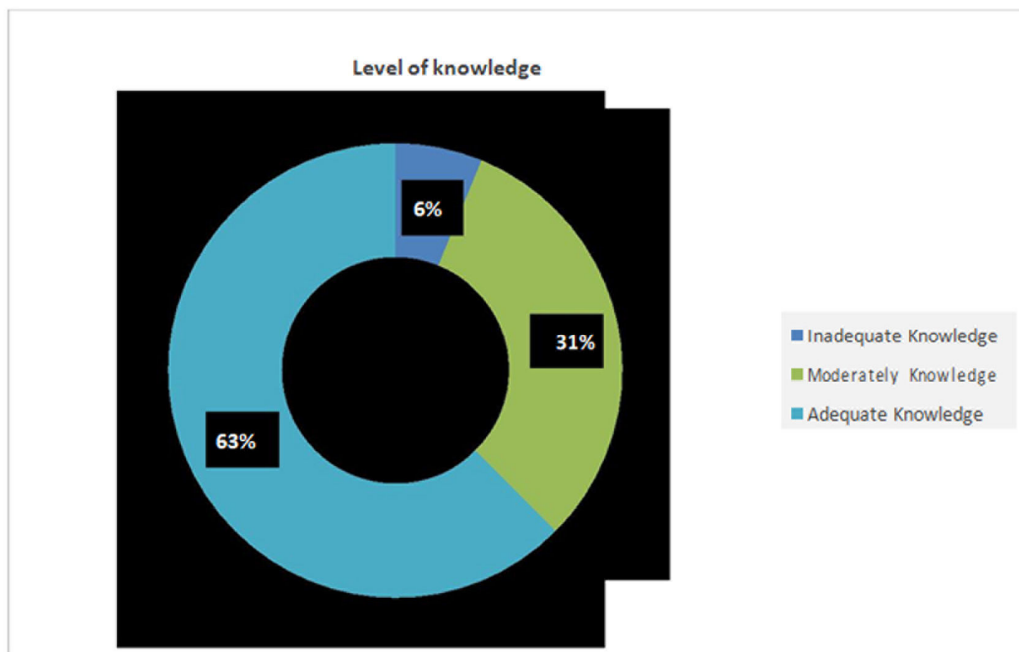


Fig. 1: frequency and percentage distribution of level of knowledge

Section C: Distribution of mean and standard deviation of level of knowledge among school going children about computer vision syndrome.

Fig. 2: Frequency and percentage distribution of demographic variables among school going children.

This Fig. 2: shows the mean and S.D of level of knowledge about computer vision syndrome of school going children. The mean score for inadequate knowledge is (0.73), moderate knowledge is (8.94)

and adequate knowledge is (22.5) and S.D score for inadequate is (0.69), moderate knowledge is (2.53) and adequate knowledge is (2.10).

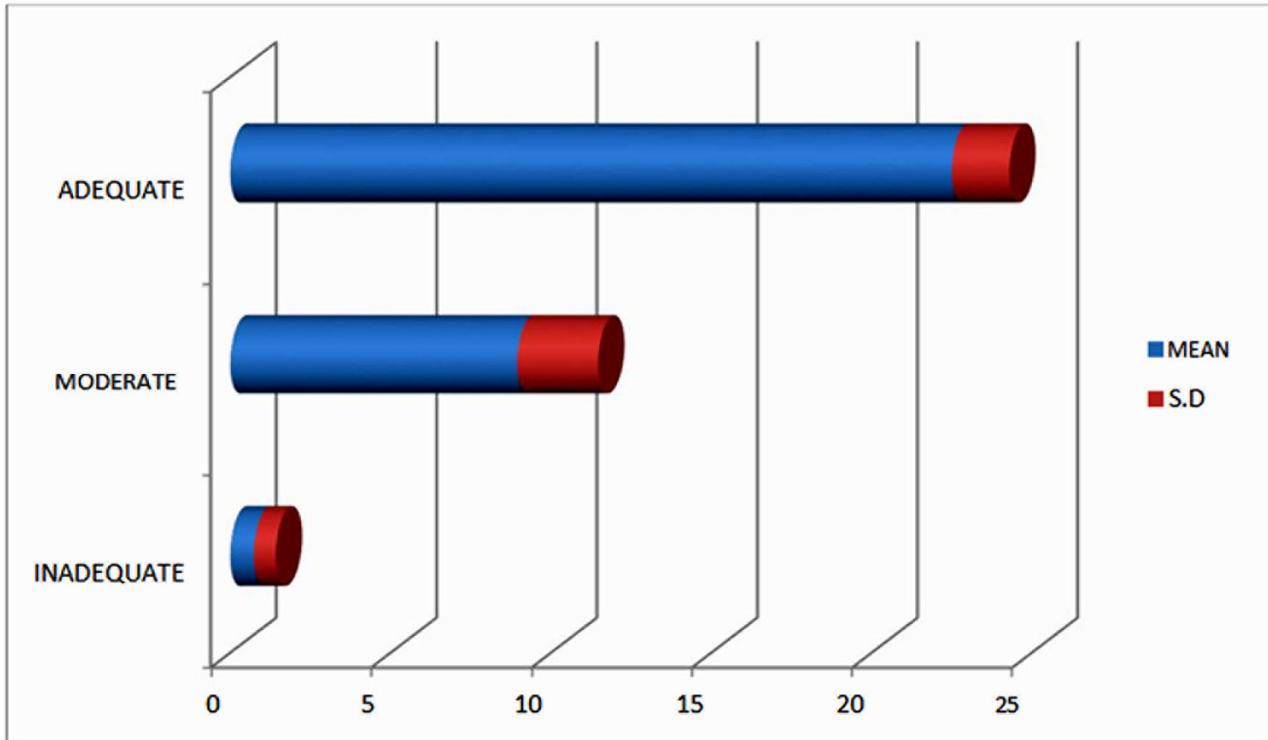


Fig. 2: Mean and standard deviation of level of knowledge

**Section D:** Association of level of knowledge with selected demographic variables among the school going children's.

Table 2: association between level of knowledge with selected demographic variables of school going children's.

S. No.	Demographic Variables	Inadequate		Moderate		Adequate		Chi-square Value
		No.	%	No.	%	No.	%	
(n=100)								
1.	Age							$\chi^2=1.807$
	(a) 12-13	0	0	0	0	0	0	d.f=4
	(b) 14-15	3	3	24	24	8	8	p = 0.05
	(c) 16-17	5	5	40	40	20	20	S**
2.	Gender							$\chi^2= 0.257$
	(a) Male	2	2	35	35	9	9	d.f=2
	(b) female	1	1	43	43	15	15	p = 0.05
								S**
3.	Religion							$\chi^2=7.760$
	(a) Hindu	2	2	31.5	31.7	13	13	d.f=6
	(b) Christian	3	3	23	23	8	8	p = 0.05
	(c) Muslims	5	5	10.5	10.5	4	4	S**
4.	Education							$\chi^2=6.553$
	(a) Middle education	0	0	0	0	0	0	education
								d.f=6
								p = 0.05

	(c) higher secondary	2	2	43	43	18	18	S **
5.	Place of residence							$\chi^2=11.715$ d.f=2 p = 0.05
	(a) urban	5	5	38	38	12	12	S **
	(b) Semi urban	10	10	28	28	7	7	
6.	Monthly income of father							$\chi^2=5.541$ d.f=4 p = 0.05
	(a) <5000	5	5	9	9	3	3	S **
	(b) 5001 -15000	3	3	26	26	7	7	
	(c) >15000	2	2	34	34	11	11	
7.	Types of family							$\chi^2=3.096$ d.f=4 p = 0.05
	(a) Nuclear family	1	1	36	36	14	14	S **
	(b) Joint family	7	7	34	34	8	8	

S\*\* Significant

Above Table 2 reveals that there was a significant association between the levels of knowledge about computer vision syndrome with their selected demographic variables such as age of samples, sex, religion, education, place of residence, monthly income of father, types of family.

## CONCLUSION

This study incontestable that the knowledge of computer vision syndrome was found to be poor, Chennai. Monthly wage, daily exposure time, sort of work and information were the foremost determinant factors for computer vision syndrome thus optimizing the exposure time and up the awareness of users. By faculty going students and management support as vital to eye drawback. Within the future, it's counseled to work out the additive impact of exploitation computers on CVS on or off operating time. A self structured questionnaire method with sample size of 30 school going children of 6-17 years old and simple random sampling technique was used. Finally the analysis of the scores on the knowledge regarding computer vision syndrome and associate risk factors showed that the computer users for school going children's had gained knowledge and improvement after self instructional module.

## ACKNOWLEDGEMENT

Author would like to appreciate all the study participants for their cooperation to complete the study successfully.

### Conflict of Interest

*Author Declare:* No conflict of interest

*Finding Support:* None

## REFERENCES

1. Ansell, J. (2007). Diagnosing, treating CVS relies on good case history: basic eye care, ergonomics and optical correction are all part of an effective treatment plan for computer vision syndrome. *Primary Care Optometry News*, 12(9), 1081-6437.
2. Noreen K., Batool Z., Fatima T., Zamir T. Prevalence of computer vision syndrome and its associated risk factors among under graduate medical students. *Pakistan Journal of Ophthalmology*.2016; 32(3):140-146.
3. Shantakumari, N., Eldeeb, R., Sreedharan, J., & Gopal, K. (2014). Computer use and vision. related problems among university students in Ajman, United Arab Emirate. *Annals of medical and health sciences research*, 4(2), 258-263.
4. Rahman, Z. A., & Sanip, S. (2011). Computer user: demographic and computer related factors that predispose user to get computer vision syndrome. *Int J Bus Humanit Technol*, 1(2), 84-91.
5. Rajeev, A., Gupta, A., & Sharma, M. (2006). Visual fatigue and computer use among college students. *Indian J Comm Med*, 31(3), 192-3.
6. Gangamma M. P., Poonam, Rajagopala M. A clin and its management with Triphala eye drops and Saptamrita Lauha. *AYU (An International Quarterly Journal of Research in Ayurveda)*2010;31(2):236-239.
7. Alemayehu, M., Nega, A., Tegegne, E., & Mule, Y. (2014). Prevalence of self-reported computer vision syndrome and associated factors among secretaries and data processors who are working in University of Gondar, Ethiopia. *Prevalence*, 4(15).
8. Rosenfield M. Computer vision syndrome: a review of ocular causes and potential treatments. *Ophthalmic and Physiological Optics*. 2011;31(5):502-515.