



A STUDY TO ASSESS THE EFFECTIVENESS OF IEC REGARDING KNOWLEDGE ON COMPUTER VISION SYNDROME AMONG INFORMATION TECHNOLOGY (IT) PROFESSIONALS OF ASTAMINDS PRIVATE LIMITED, CHENNAI.

Hema Maalini.A¹, Logeshwari.M², Mrs.Tamilselvi.S^{3*}, Dr.C. Kanniammal⁴

Article History: Received: 05.03.2023

Revised: 22.04.2023

Accepted: 02.06.2023

ABSTRACT

An extensive review of literature for the study was done, which helped the investigator to identify, select, critically analyze and report on existing information of the problem selected for the study and design tool for data collection.

Methodology: Non experimental descriptive design technique was adopted to assess the effectiveness of IEC regarding knowledge on computer vision syndrome among IT professionals of Astaminds private limited, Chennai. 60 IT professionals who fulfilled the inclusion criteria were selected by non probability convenient sampling technique. Structured questionnaire was used to assess the demographic variables and knowledge regarding computer vision syndrome among IT professionals. Reliability of the tool was established by split half method. The r value was $r=0.75$. the correlation coefficient was high, hence the tool was considered reliable and feasible for proceeding with the main study.

Results and Discussion: The findings of the study revealed that half of the subjects 25(41.7%) had inadequate knowledge in the pre test and maximum number of subjects 52(86.7%) had adequate knowledge in the post test and concluded that there was a significant improvement in subject's knowledge in the post test after Information Education and Communication on computer vision syndrome.

Conclusion: Thus, the Information Education and Communication was found to be effective in improving the knowledge regarding computer vision syndrome among IT professionals.

¹BSc(N), SRM College Of Nursing, SRMIST, Kattankulathur, Chennai, Tamil Nadu-603203,

²BSc(N), SRM College Of Nursing, SRMIST, Kattankulathur, Chennai, Tamil Nadu-603203.

^{3*}MSc(N), Assistant Professor, SRM College of Nursing, SRM IST, Kattankulathur, Chennai, Tamil Nadu- 603203

⁴R.N., R.M., M.Sc.(N), Ph.D. (N), DEAN, SRM College of Nursing, SRMIST, Kattankulathur,

Email: ¹hemamahe202@gmail.com, ^{3*}tamil802b@gmail.com

DOI: 10.31838/ecb/2023.12.s2.348

1. Introduction

Technological advancement has created an impact in every aspect of our lives especially after the origin of computer. Computer vision syndrome also referred as digital eye strain, explains a group of eye and vision related problems that is due to from prolonged computer, tablet, e-reader, and cellphone use. Many individuals experience eye discomfort and visual problems when viewing digital screens for prolonged duration. The level of discomfort tends to increase with the amount of digital screen use. Worldwide it is estimated to be 60 million people experienced vision problem due to computer use. The National Institute Of Occupational Safety And Healthy (NIOSH) stated that nearly 88% of all computer professionals will develop computer vision syndrome at sometime in their lives.

Background of the Study

Globally, computer vision syndrome is the most common eye problem which is related with prolonged exposure to computer. It has a remarkable socioeconomic impact on the users because of its effect on job performance. In recent times, people all over the world are spending their time in front computer screen to make their work easier. Since it is assumed that knowledge is pertinent to prevent computer vision syndrome, this study was aimed at assessing the effectiveness of IEC on knowledge regarding computer vision syndrome

Statement of the Problem

A study to assess the effectiveness of IEC on knowledge regarding computer vision syndrome among IT professionals of Astaminds private limited, Chennai.

Objectives of the Study

- To assess the pretest and post test knowledge regarding computer vision

syndrome among IT professionals of Astaminds private limited, Chennai.

- To determine the effectiveness of Information Education Communication (IEC) on knowledge regarding computer vision syndrome among IT professionals of Astaminds private limited, Chennai.

- To find out the association between pretest and post test level of knowledge regarding computer vision syndrome among IT professionals of Astaminds private limited, Chennai with their selected demographic variables.

Assumptions

- IT workers may have some knowledge about computer vision syndrome.
- Inculcating knowledge may help them to be careful while using computers
- Information Educational Communication may improve the knowledge on computer vision syndrome.

Research Hypothesis

- **RH1-** There was a significant difference between pretest and post test in the assessment of knowledge on computer vision syndrome
- **RH2 –** There was a significant association on pretest and post test level of knowledge regarding computer vision syndrome among IT professionals with their selected demographic variables.

Delimitations

- The study is delimited to a period of 1 week for data collection
- The study is delimited through zoom online video conference due to pandemic.

2. Methodology

Non experimental descriptive design technique was adopted to assess the effectiveness of IEC regarding knowledge on computer vision syndrome among IT professionals of Astaminds private limited, Chennai. 60 IT professionals who fulfilled the inclusion criteria were selected by non

probability convenient sampling technique. Structured questionnaire was used to assess the demographic variables and knowledge regarding computer vision syndrome among IT professionals. Reliability of the tool was established by split half method. The r value was $r=0.75$. the correlation coefficient was high, hence the tool was considered reliable and feasible for proceeding with the main study. The informed consent of the sample was acquired, and the confidentiality of the information was ensured. The researcher employed a constructed questionnaire to determine the amount of knowledge of computer vision syndrome among the participants pretest was done and then teaching regarding computer vision syndrome was given to them again post-test was done to evaluate the efficiency of a teacher's instruction. The link was sent to all research participants, to receive response for the structured questionnaire.

Organization of the Data

Section A:

Frequency and percentage distribution of demographic variables of IT professionals.

Section B:

Frequency and percentage distribution of level of knowledge regarding computer vision syndrome among IT professionals.

Section C:

Effectiveness of Information Education Communication (IEC) on knowledge regarding computer vision syndrome among IT professionals.

Section D:

Association of pretest level of knowledge regarding computer vision syndrome among IT professionals with their selected demographic variables.

Section E:

Association of post test level of knowledge regarding computer vision syndrome among IT professionals with their selected demographic variables.

Table 4.1: Frequency and percentage distribution of demographic variables of IT professionals. n = 60

DEMOGRAPHIC VARIABLES	FREQUENCY	PERCENTAGE
Age		
20 – 25 years	45	75.0
26 – 30 years	9	15.0
Above 30 years	6	10.0
Sex		
Male	23	38.3
Female	37	61.7
None of the above	-	-
Qualification		
UG degree	44	73.4
PG degree	14	23.3
Diploma	2	3.3
Area of residence		
Urban	43	71.7
Rural	9	15.0
Semi-urban	8	13.3
Type of family		
Nuclear family	55	91.7
Joint family	5	8.3
Duration of computer usage		
8 hours	27	45.0

8 – 12 hours	26	43.3
More than 12 hours	7	11.7
Recent eye check up, if any		
Yes	23	38.3
No	37	61.7

The table 1 shows that most of the IT professionals, 45(75%) were aged between 20–25 years, 37(61.7%) were female, 44(73.4%) were undergraduates, 43(71.7%) were residing in urban area,

55(91.7%) belonged to nuclear family, 27(45%) were using computer for 8 hours and 37(61.7%) had no done any recent eye check up.

Table 4.2: Frequency and percentage distribution of level of knowledge regarding computer vision syndrome among IT professionals. n = 60

Knowledge	Inadequate (1 – 10)		Moderate (11 – 20)		Adequate (21 – 30)	
	No.	%	No.	%	No.	%
Pretest	25	41.7	32	53.3	3	5.0
Post Test	2	3.3	6	10.0	52	86.7

The table 2 depicts that in the pretest, 32(53.3%) had moderate knowledge, 25(41.7%) had inadequate knowledge and 3(5%) had adequate knowledge.

The table 2 also shows that in the post test, 52(86.7%) had adequate knowledge, 6(10%) had moderate knowledge and 2(3.3%) had inadequate knowledge regarding computer vision syndrome.

Table 4.3: Effectiveness of Information Education Communication (IEC) on knowledge regarding computer vision syndrome among IT professionals. n = 60

Knowledge	Mean	S.D	Mean Difference Score	Paired ‘t’ Test value
Pretest	12.17	4.49	13.68	t = 12.504 p = 0.0001, S***
Post Test	25.85	5.86		

***p<0.001, S – Significant

The table 3 shows that the pretest mean score of knowledge was 12.17±4.49 and the post test mean score of knowledge was 25.85±5.86. The mean difference score was 13.68. The calculated paired ‘t’ test value of t = 12.504 was found to be statistically significant at p<0.001 level.

This clearly infers that Information Education Communication (IEC) on knowledge regarding computer vision syndrome administered to IT professionals was found to be effective in improving the post test level of knowledge among IT professionals.

Table 4.4: Association of pretest level of knowledge regarding computer vision syndrome among IT professionals with their selected demographic variables.n = 60

Demographic Variables	Inadequate		Moderate		Adequate		Chi-Square Value
	No.	%	No.	%	No.	%	
Age							$\chi^2=2.580$ d.f=4
20 – 25 years	17	28.3	25	41.7	3	5.0	

26 – 30 years	4	6.7	5	8.3	0	0	p = 0.630
Above 30 years	4	6.7	2	3.3	0	0	N.S
Sex							$\chi^2=2.545$
Male	7	11.7	14	23.3	2	3.3	d.f=2
Female	18	30.0	18	30.0	1	1.7	p = 0.280
None of the above	-	-	-	-	-	-	N.S
Qualification							$\chi^2=3.435$
UG degree	21	35.0	21	35.0	2	3.3	d.f=4
PG degree	4	6.7	9	15.0	1	1.7	p = 0.488
Diploma	0	0	2	3.3	0	0	N.S
Area of residence							$\chi^2=1.392$
Urban	18	30.0	23	38.3	2	3.3	d.f=4
Rural	3	5.0	5	8.3	1	1.7	p = 0.846
Semi-urban	4	6.7	4	6.7	0	0	N.S
Type of family							$\chi^2=1.615$
Nuclear family	24	40.0	28	46.7	3	5.0	d.f=2
Joint family	1	1.7	4	6.7	0	0	p = 0.446
							N.S
Duration of computer usage							$\chi^2=4.530$
8 hours	12	20.0	12	20.0	3	5.0	d.f=4
8 – 12 hours	10	16.7	16	26.7	0	0	p = 0.339
More than 12 hours	3	5.0	4	6.7	0	0	N.S
Recent eye check up, if any							$\chi^2=4.837$
Yes	7	11.7	16	26.7	0	0	d.f=2
No	18	30.0	16	26.7	3	5.0	p = 0.089
							N.S

N.S – Not Significant

The table 4 shows that none of the demographic variables had shown statistically significant association with

pretest level of knowledge regarding computer vision syndrome among IT professionals.

Table 4.5: Association of post test level of knowledge regarding computer vision syndrome among IT professionals with their selected demographic variables. n = 60

Demographic Variables	Inadequate		Moderate		Adequate		Chi-Square Value
	No.	%	No.	%	No.	%	
Age							$\chi^2=2.872$
20 – 25 years	1	1.7	5	8.3	39	65.0	d.f=4
26 – 30 years	1	1.7	1	1.7	7	11.7	p = 0.580
Above 30 years	0	0	0	0	6	10.0	N.S
Sex							$\chi^2=0.532$
Male	1	1.7	3	5.0	19	31.7	d.f=2
Female	1	1.7	3	5.0	33	55.0	p = 0.767
None of the above	-	-	-	-	-	-	N.S
Qualification							$\chi^2=1.260$
UG degree	2	3.3	5	8.3	37	61.7	d.f=4
PG degree	0	0	1	1.7	13	21.7	p = 0.868

Diploma	0	0	0	0	2	3.3	N.S
Area of residence							$\chi^2=3.824$
Urban	1	1.7	5	8.3	37	61.7	d.f=4
Rural	0	0	0	0	9	15.0	p = 0.430
Semi-urban	1	1.7	1	1.7	6	10.0	N.S
Type of family							$\chi^2=0.839$
Nuclear family	2	3.3	6	10.0	47	78.3	d.f=2
Joint family	0	0	0	0	5	8.3	p = 0.657
							N.S
Duration of computer usage							$\chi^2=3.674$
8 hours	0	0	3	5.0	24	40.0	d.f=4
8 – 12 hours	2	3.	3	5.0	21	35.0	p = 0.452
More than 12 hours	0	0	0	0	7	11.7	N.S
Recent eye check up, if any							$\chi^2=1.399$
Yes	0	0	2	3.3	21	35.0	d.f=2
No	2	3.3	4	6.7	31	51.7	p = 0.497
							N.S

N.S – Not Significant

The table 5 shows that none of the demographic variables had shown statistically significant association with post test level of knowledge regarding computer vision syndrome among IT professionals.

3. Results and Discussion

The pretest mean score of knowledge was 12.17 ± 4.49 and the post test mean score of knowledge was 25.85 ± 5.86 . The mean difference score was 13.68. The calculated paired 't' test value of $t = 12.504$ was found to be statistically significant at $p < 0.001$ level. This clearly infers that Information Education Communication (IEC) on knowledge regarding computer vision syndrome administered to IT professionals was found to be effective in improving the post test level of knowledge among IT professionals.

The findings of the study were consistent with a study which was conducted to assess the effectiveness of Information Education and Communication on computer vision syndrome with the sample size of 60 .The study revealed in the pre test, majority 32 (53.3%) of them had

moderate knowledge and 25 (41.7%) had inadequate knowledge and 3 (5.0%) of them had adequate knowledge but in the post test, majority 52(86.7) of the subjects had adequate knowledge, 6 (10.0%) of them had moderate knowledge and 2 (3.3%) had inadequate knowledge. The post test mean percentage 25.85 was higher than the pre test mean percentage 12.17 and with the gain in mean percentage of 13.68 . The study showed that there was a significant increase in knowledge level of IT professionals after Information Education and Communication at $p < 0.001$. None of the demographic variables had shown statistically significant association with pretest and post test level of knowledge regarding computer vision syndrome among IT professionals.

4. Conclusion

The present study assessed the subject's knowledge regarding effectiveness of IEC on knowledge regarding computer vision syndrome and found that half of the subjects 25(41.7%) had inadequate knowledge in the pre test and maximum

number of subjects 52(86.7%) had adequate knowledge in the post test and concluded that there was a significant improvement in subject's knowledge in the post test after Information Education and Communication on computer vision syndrome. Thus, the Information Education and Communication was found to be effective in improving the knowledge regarding computer vision syndrome among IT professionals.

By provision of Information Education and Communication, IT professionals will improve the knowledge regarding computer vision syndrome. The IT professionals had expressed that they were able to gain more knowledge regarding computer vision syndrome and the teaching enabled them to reflect on their own performance and skills; they had actively participated in the learning process.

5. Reference

- Pant Kamal et.al, "A Correlational study of computer vision syndrome with device brightness mode", May 2021, International Journal of Applied Research and Studies.
- Ghufran A. Abudawood et.al, "A study on Computer Vision Syndrome among undergraduate medical students in King Abdulaziz University, Jeddah, Saudi Arabia", April 2020, Journal of Ophthalmology.
- Samuel Asare et.al, "A study on the prevalence and knowledge of university students on Computer Vision Syndrome (CVS)", July 2020, IOSR Journal of Computer Engineering.
- Getasew Alemu Mersha et.al, "A study to assess the knowledge about Computer Vision Syndrome among Bank Workers in Gondar City, Northwest Ethiopia" April 2020.
- Samuel Bert Boadi-Kusi et.al, "A study to assess the association between poor Ergophthalmologic practices and Computer Vision Syndrome among university administrative staff in Ghana", April 2020, J Environ Public Health.
- Ranganatha SC et.al, "A Cross-Sectional Study to assess the Prevalence and Associated Risk Factors of Computer Vision Syndrome among the Computer Science Students of an Engineering College of Bengaluru", September 2019, Galore International Journal of Health Sciences and Research.
- Putri Angrainy et.al, "A study to assess the difference in Computer Vision Syndrome between laptop and desktop computer users", June 2018, Indonesian Journal of Medicine.
- Nidhi Tiwari et.al, "A retrospective study on effect of therapy on computer vision syndrome patients having convergence insufficiency", January 2017, Kerala J Ophthalmol.
- Soumya Harapanahalli Venkatesh et.al, "A Study of Computer Vision Syndrome at the Workplace -Prevalence and Causative Factors", August 2016, International Journal of Contemporary Medical Research.
- Reddy SC et.al, "A Study of Knowledge and Practices in University Students", 2013, Nepal J Ophthalmol.
- Dr. Ranchana Gupta et.al, "Interventional Cohort Study for Evaluation of Computer Vision Syndrome among Computer Workers", December 2013.
- Lizette Mowatt et.al, "Computer Vision Syndrome and ergonomic practices among undergraduate university students", October 2017, International Journal of Clinical Practice.