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A Study to assess The Effectiveness Of Information Booklet Regarding Prevention Of Computer Vision Syndrome among Computer Operators Working in AVMC & H

R.Sasikala*, Ponni.P[2], Porselvi.P[2], Pradeepa.V[2]
[1]Assistant Professor, Department of Medical Surgical Nursing,Vinayaka mission's College of Nursing, Kirumampakkam, Puducherry, India
[2]Vinayaka mission's College of Nursing, Kirumampakkam, Puducherry, India
*Email ID: sasikala.r@vmcnpdy.edu.in

ABSTRACT

*A quantitative pre-experimental research design was used for this study, to assess the effectiveness of information booklet regarding prevention of Computer Vision Syndrome among computer operators working in AVMC & H Puducherry with sample size of 40 computer operators through convenience sampling technique .Data was collected by using a Demographic variables, Knowledge and Practice questionnaire and Computer Vision Syndrome Scale (CVSS -17).The pretest was conducted by using questionnaire method to identify computer vision syndrome (CVS) among computer operators. The result reveals, the subjects had mild Computer Vision Syndrome 20(50.0%),moderate computer vision syndrome was 19(47.5%)and severe computer vision syndrome was 1(2.5%).The pretest knowledge and practice of computer operators reveals that inadequate knowledge was 28(70.0%), moderate knowledge was 11(27.5%), and adequate knowledge was 1(2.5%). The posttest reveals that inadequate knowledge was (0%), moderate knowledge was 3(7.5%) and adequate knowledge was 37(92.5%). Pretest knowledge & practice score mean value is 4.35 with SD of 1.79. Posttest knowledge & practice score mean value 8.75 with SD 0.87. Effectiveness of information booklet on computer vision syndrome was compared by using paired t test done by test value of t=25.735 with the P value <0.001 which found to be statistically significant improvement. There was a significant association between pretest knowledge with demographic variable was found in age (χ^2=14.404, p=0.025**)** and found in do you take any eye drops (χ^2=7.350, p=0.025**)**.The study concluded that the information booklet was effective on reducing CVS.*

Key Words- *Information booklet, CVS, Effectiveness*

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INTRODUCTION

Computer vision syndrome also referred to as digital eye strain, describes a group of eye and vision related problems that result from prolonged computer, tablet, e-reader and cell phone use. Many individual experience eye discomfort and vision problems when viewing digital screen for extended periods.A continuous use of computer for a prolonged period causes vision problem called Computer Vision Syndrome. The American optometric association as a complex of eye defines computer vision syndrome and vision problems related to the activities which stress the near vision and which are experienced in relation or during the use of computer. It encompasses a group of visual symptoms that crop up from the extended viewing of the digital screen. CVS symptoms which are referred to as Digital eye strain include dry and irritated eyes, eye Strain, fatigue, blurred vision, red eyes, burning eyes, excessive tearing, double Vision, headache.

MATERIAL AND METHODS

Quantitative research approach was used to assess the effectiveness of information booklet on prevention of computer vision syndrome among computer operators. Target population of the study comprises of both male and female computer operators working at AVMC&H for more than a year. The sample size for the present study was 40 computer operator by using convenience-sampling technique. Data was collected by using a demographic variable, Knowledge and Practice questionnaire and Computer Vision Syndrome Scale (CVSS -17).The pretest was conducted by using questionnaire method to identify computer vision syndrome (CVS) among computer operators. After obtaining ethical clearance study was conducted. The purpose of the study was explained to the selected subjects and written consent was

obtained. The questionnaire was given to the subjects. 10 members per day answered the questionnaire for 4 consecutive days. Information booklet was provided to the subjects. Posttest was conducted after a week.

RESULTS

SECTION A: DESCRIPTION OF THE DEMOGRAPHIC VARIABLES OF THE COMPUTER OPERATORS.

Table 1: Frequency and percentage distribution of demographic variables of computer operators. n = 40

Demographic Variables	No.	%
Age		
20 – 30 years	16	40.0
30 – 40 years	11	27.5
40 – 50 years	10	25.0
50 – 60 years	3	7.5
Gender		
Male	16	40.0
Female	24	60.0
Marital status		
Married	29	72.5
Single	10	25.0
Divorced	-	-
Widow	1	2.5
Family income		
5,000 – 8,000	2	5.0
8,001 – 10,000	4	10.0
10,001 – 13,000	34	85.0
13,001 and above	-	-
Religion		
Hindu	40	100.0
Muslim	-	-
Christian	-	-
Others	-	-
Educational status		
UG	22	55.0
PG	13	32.5
Diploma	5	12.5
Do you have any previous knowledge about CVS?		
Yes	12	30.0
No	28	70.0
How many years working as a computer operator?		
Below 5 years	8	20.0
5 years	11	27.5
10 years	8	20.0
15 years	13	32.5
Do you use spectacle?		
Yes	16	40.0
No	24	60.0
Have you undergone any previous eye surgery?		
Yes	1	2.5
No	39	97.5
Do you take any eye drops?		
Yes	8	20.0
No	32	80.0
Do you adjust the contrast of your computer?		
Yes	15	37.5
No	25	62.5

Table 1 show that, majority of the subjects 16(40%) were aged between 20-30yrs. Most of them were female 24(60%) and married 29(72.5%). Majority were earning 10,001-13,000 was 34(85%). Most of them completed UG 22(55%).Highest percentage was found to be not have previous knowledge on CVS 28(70%).Most of them had 13yrs exposure to computer work was 13(52.5%).Majority were not used spectacles 24(60.0%), 39(97.5%) were not undergone surgery and 32(80.0%) not taken eye drops. Highest percentage was found on not adjusted their contrast of the computer was 25(62.5%).

SECTION B: ASSESSMENT OF PRETEST KNOWLEDGE & PRACTICE AND PREVALENCE OF COMPUTER VISION SYNDROME AMONG COMPUTER OPERATORS.

Table 2: Frequency and percentage distribution of pretest level of knowledge and practice on information booklet on prevention of Computer Vision Syndrome.
n = 40

Level of Knowledge and Practice	Pretest	
	No.	%
Inadequate (0 – 50%)	28	70.0
Moderate (51 – 74%)	11	27.5
Adequate (≥75%)	1	2.5

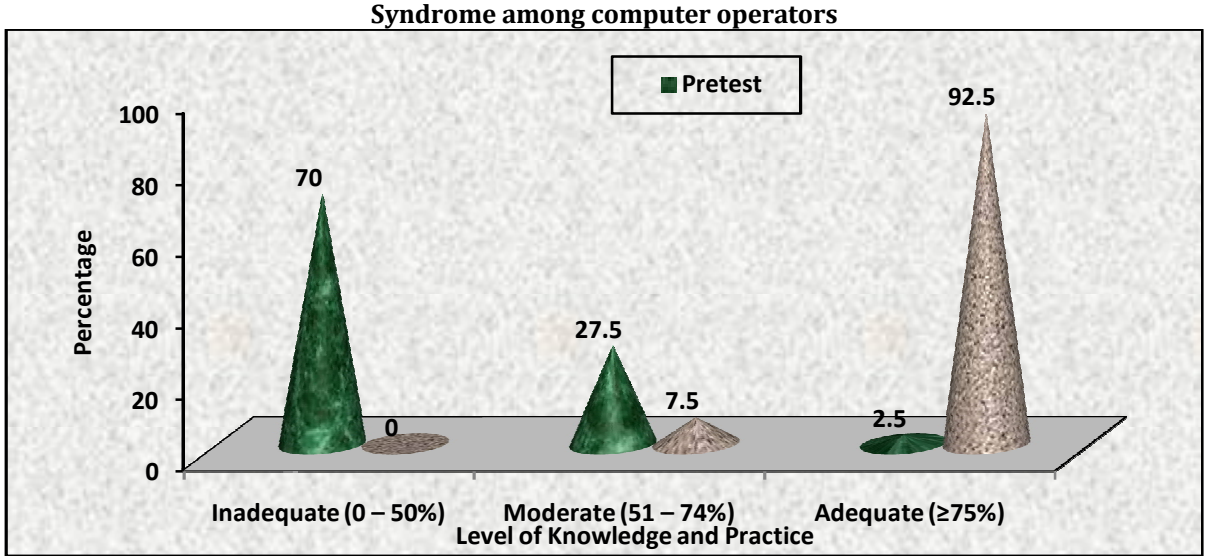
The table 2 shows pretest level of knowledge results that majority had inadequate level of knowledge & practice which was 28(70%) and moderate level of knowledge & practice was 11(27.5%). Only 1(2.5%) had adequate knowledge and practice.

Table 3: Frequency and percentage distribution of prevalence of Computer Vision Syndrome among computer operators. n = 40

Prevalence	Pretest		Post Test	
	No.	%	No.	%
No Computer Vision Syndrome (0)	0	0	1	2.5
Mild (1 – 23)	20	50.0	24	60.0
Moderate (24 – 47)	19	47.5	15	37.5
Severe (48 – 70)	1	2.5	-	-

The table 3 shows that in the pretest, 20(50%) had mild computer vision syndrome, 19(47.5%) had moderate computer vision syndrome and 1(2.5%) had severe computer vision syndrome.
The table 3 also that in the post test, 24(60%) had mild computer vision syndrome, 15(37.5%) had moderate computer vision syndrome and 292.5%) had no computer vision syndrome.

Fig.no:1: Percentage distribution of level of knowledge and practice on Computer Vision Syndrome among computer operators



SECTION C: EFFECTIVENESS OF INFORMATION BOOKLET ON PREVENTION OF COMPUTER VISION SYNDROME AMONG COMPUTER OPERATORS.

Table 4: Frequency and percentage distribution of posttest level of knowledge and practice on information booklet on prevention of Computer Vision Syndrome.n = 40

Level of Knowledge and Practice	Post Test	
	No.	%
Inadequate (0 – 50%)	0	0
Moderate (51 – 74%)	3	7.5
Adequate (≥75%)	37	92.5

Table 4 shows that the posttest knowledge reveals that 37(92.5%) had adequate knowledge & practice and only 3(7.5%) had moderate level of knowledge & practice. None of them was found in inadequate level.

Table 5: Comparison of pretest and posttest level of knowledge and practice among computer operators.n = 40

Knowledge and Practice	Mean	S.D	Mean Difference	Paired 't' Test Value
Pretest	4.35	1.79	4.40	**t=25.735**
Post Test	8.75	0.87		**p=0.0001, S*****

***p<0.001, S – Significant

The table 5 depicts that the pretest mean score of knowledge and practice was 4.35±1.79 (S.D) and the posttest mean score was 8.75±0.87 (S.D). The mean difference score was 4.40. The calculated paired 't' test value of t = 25.735 was found to be statistically significant which clearly infers that there was significant improvement in the post test level of knowledge and practice among the computer operators.

SECTION D: ASSOCIATION OF PRETEST LEVEL OF KNOWLEDGE AND PRACTICE WITH SELECTED DEMOGRAPHIC VARIABLES ON COMPUTER VISION SYNDROME.

Table 6: Association of pretest level of knowledge and practice on Computer Vision Syndrome among computer operators with their selected demographic variables. n = 40

Demographic Variables	Inadequate		Moderate		Adequate		Chi-Square Value
	No.	%	No.	%	No.	%	
Age							
20 – 30 years	13	32.5	3	7.5	0	0	**χ^2=14.404 d.f=6 p=0.025 S***
30 – 40 years	8	20.0	3	7.5	0	0	
40 – 50 years	6	15.0	4	10.0	0	0	
50 – 60 years	1	2.5	1	2.5	1	2.5	
Gender							χ^2=0.809 d.f=2 p=0.667 N.S
Male	11	27.5	5	12.5	0	0	
Female	17	42.5	6	15.0	1	2.5	
Marital status							χ^2=6.502 d.f=4 p=0.165 N.S
Married	17	42.5	11	27.5	1	2.5	
Single	10	25.0	0	0	0	0	
Divorced	-	-	-	-	-	-	
Widow	1	2.5	0	0	0	0	
Family income							χ^2=3.025 d.f=4 p=0.554 N.S
5,000 – 8,000	2	5.0	0	0	0	0	
8,001 – 10,000	4	10.0	0	0	0	0	
10,001 – 13,000	22	55.0	11	27.5	1	2.5	
13,001 and above	-	-	-	-	-	-	
Religion							-
Hindu	28	70.0	11	27.5	1	2.5	
Muslim	-	-	-	-	-	-	
Christian	-	-	-	-	-	-	

Demographic Variables	Inadequate		Moderate		Adequate		Chi-Square Value
	No.	%	No.	%	No.	%	
Others	-	-	-	-	-	-	
Educational status							χ^2=2.504 d.f=4 p=0.644 N.S
UG	15	37.5	7	17.5	0	0	
PG	9	22.5	3	7.5	1	2.5	
Diploma	4	10.0	1	2.5	0	0	
Do you have any previous knowledge about CVS?							χ^2=2.879 d.f=2 p=0.237 N.S
Yes	7	17.5	4	10.0	1	2.5	
No	21	52.5	7	17.5	0	0	
How many years working as a computer operators?							χ^2=8.303 d.f=6 p=0.217 N.S
Below 5 years	7	17.5	1	2.5	0	0	
5 years	9	22.5	2	5.0	0	0	
10 years	3	7.5	4	10.0	1	2.5	
15 years	9	22.5	4	10.0	0	0	
Do you use spectacle?							χ^2=1.851 d.f=2 p=0.396 N.S
Yes	10	25.0	5	12.5	1	2.5	
No	18	45.0	6	15.0	0	0	
Have you undergone any previous eye surgery?							χ^2=2.704 d.f=2 p=0.259 N.S
Yes	0	0	1	2.5	0	0	
No	28	70.0	10	25.0	1	2.5	
Do you take any eye drops?							χ^2=7.350 d.f=2 p=0.025 S*
Yes	3	7.5	4	10.0	1	2.5	
No	25	62.5	7	17.5	0	0	
Do you adjust the contrast of your computer?							χ^2=2.306 d.f=2 p=0.316 N.S
Yes	9	22.5	5	12.5	1	2.5	
No	19	47.5	6	15.0	0	0	

*<0.05, S – Significant, N.S – Not Significant

Table 6 shows the association of pretest knowledge with selected demographic variable. There is a significant association between age & knowledge with χ^2 value **14.404** at **p=0.025.** There is a significant association between pretest knowledge and taking eye drops with χ^2 value **7.350** at **p=0.025.**

DISCUSSION

The pretest of knowledge results that majority had inadequate level of knowledge & practice which was 28(70%) and moderate level of knowledge & practice was 11(27.5%). Only 1(2.5%) had adequate knowledge and practice. The result reveals that majority of the subjects had, 20(50%) mild computer vision syndrome, 19(47.5%) had moderate computer vision syndrome and 1(2.5%) had severe computer vision syndrome. The essence of research is to build a body of knowledge in nursing, and it involving profession. The findings of the study serve as a basis for professionals to conduct further study on CVS.A study can be conducted for the large sample size. A similar study can be done with college students in preventing computer vision syndrome.A study can be conducted on effectiveness of selective preventive measures.

CONCLUSION

The study was under taken to assess the effectiveness of information booklet regarding prevention of computer vision syndrome among computer operators in AVMC &H.40 samples was selected by using convenience sampling method. The result reveals that, in pretest, the mean score of knowledge and practice was 4.35±1.79 and the posttest mean score was 8.75±0.87. The mean difference score was 4.40. The calculated paired 't' test value of t = 25.735 with p=0.0001 was found to be statistically significant

which clearly infers that there was significant improvement in the post test level of knowledge and practice among the computer operators.The study concluded that the information booklet was effective on prevention of computer vision syndrome among computer operators.

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