Educational Mission for Effective Vision

Sujitha Jebarose Jebanesy T.[1], Sandhya R.[1], Manickam S.[2]

[1]Assistant Professor, Faculty of Nursing, Dr. M.G.R. Educational and Research Institute, Chennai, Tamilnadu, India, [3]B.Sc. (N) IV Year Candidate, Faculty of Nursing, Dr. M.G.R. Educational and Research Institute, Chennai, Tamilnadu, India

Abstract

Aim and Objective: To examine the knowledge and skill regarding prevention of computer vision syndrome among computer science Students.

Methodology: A quasi experimental pre test post test design was chosen to assess the knowledge and skill regarding prevention of computer vision syndrome among 60 computer science Students at Selected College, Chennai. The samples were selected using simple random sampling (lottery method). Results: The findings of the study showed that the pre test mean for knowledge was 8.41 with a standard deviation of 2.07 and the post test mean for knowledge was 14.93 with a standard deviation of 2.65 and the post test mean for skill was 34 with a standard deviation of 1.96 which indicated that there was statistically high level of significant difference in the post test level of knowledge and skill among computer science Students at $p<0.001$ level.

Conclusion: The study infers that there was a significant improvement in the knowledge and skill regarding prevention of computer vision syndrome among computer science Students after providing IEC cum Demonstration.

Keywords: *Computer vision syndrome, IEC package with Demonstration, Computer Science students.*

Introduction

"Keep Your Eyes Healthy in the Digital World"

Computers have become an essential part of modern human life. Life in today's world would be unimaginable without computers. They have made human lives better and happier. Although computers have become a vital part of human society, they cause a lot of health problems to humans.

Computer vision syndrome [CVS] is the strain on the eyes that happens when you use a computer or digital device for prolonged period of time. Many individuals who work at computer, report a high level of job-related complaints and symptoms, including ocular discomfort, muscular strain and stress. The level of discomfort appears to increase with the amount of computer use. Anyone who has spent a few hours on the computer has probably felt some of the effects of prolonged use of the computer or other digital technology.

The prevalence rate of computer vision syndrome is increased in 20th century. Computer vision syndrome affects the people who spend three hours or more a day at a computer[4]. The **world statistics** explored about **60 million people** are suffering from Computer Vision Syndrome and approximately a million new cases occur every year[3,4]. In **India**, the people using computer is more than **40 million** and 80% of them have discomfort due to CVS[1, 5].

There are many studies in worldwide raising the topic of prevention of computer vision syndrome,

Corresponding Author:
Ms. Sujitha Jebarose Jebanesy T.
M.Sc. (Nursing)., M.B.A., Assistant Professor, Faculty of Nursing, Dr. M.G.R. Educational and Research Institute, Chennai, Tamilnadu, India
Contact No.: 8681979871
e-mail: jebarosesuji@gmail.com

emphasizing on taking steps to control the computer vision syndrome and computer related eye problems.

There are various method available in order to improve the skill and knowledge regarding prevention of computer vision syndrome. IEC and exercise were improving the students' knowledge in a beginning part of their life to avoid complication in future periods.

In our country, usage of computer is increased and the prevalence rate of computer vision syndrome is also getting increased. This motivates the students to choose computer as their carrier. Hence this study had done among Computer Science students to create awareness regarding Computer Vision syndrome in order to prevent it in future

Statement of the Problem: A Quasi Experimental Study to Assess the Effectiveness of Information Education Communication Cum Demonstration on Knowledge and skill regarding Prevention of Computer Vision Syndrome among computer science students at selected College, Chennai.

Objectives:

1. To assess the effectiveness of Information Education Communication cum demonstration on knowledge and skill regarding prevention of Computer Vision Syndrome.
2. To co-relate knowledge and skill regarding prevention of computer vision syndrome.
3. To associate the selected demographic variables with the mean differed level of knowledge and Skill regarding prevention of Computer Vision Syndrome.

Research Hypothesis:

NH_1: There is no significant difference between the pre and post-test level of knowledge and skill regarding prevention of computer vision syndrome among computer science students at $p<0.05$ level.

NH_2: There is no significant association between of the selected demographic variables with the mean differed level of knowledge and skill regarding prevention of computer vision syndrome among computer science students at $p>0.05$ level.

Materials and Method

Research Approach-Quantitative Approach

⇩

Research Design- Quasi Experimental Design

⇩

Independent Variable -Information Education Communication cum demonstration

⇩

Dependent Variable – Knowledge and skill regarding prevention of computer vision syndrome.

⇩

Setting- Selected College, Chennai

⇩

Population – B.Sc.,Computer Science Students studying at Selected College, Chennai

⇩

Sample

↙ ↘

Sample size- 60 B.Sc., Computer Science Students

Sampling Technique- Simple Random sampling(Lottery method)

Sampling Criteria:

1. Age between 17-21 years
2. Students never attended the any class for Knowledge and skill regarding prevention of computer vision syndrome

Instruments Used:

Part I: Demographic Variables: Age, Gender, Year of study, Availability of computer at house, Type of computer used, duration of computer used, Any preventive measure used, Type of lighting used at computer room.

Part II: Structured Knowledge Questionnaire: It consists of 20 self-structured questions to assess the knowledge of computer science students regarding prevention of computer vision syndrome.

Scoring Interpretation:

Score	Level of Knowledge
0-6	Inadequate knowledge
7-13	Moderate knowledge
14-20	Adequate knowledge

Part III: Observational Checklist: It is a 3 point likert scale, consisting of 5 exercises (1. Incessant blinking, 2. 20-20-20 rule, 3. Eye rolling 4. Palming 5. eye breathing exercise) to observe the skills on prevention of computer vision syndrome. It is scored in range from 0-2(0-not done, 1- partially done, 2-done.) Total marks are 36.

Scoring Interpretation:

1. >8	Good practice
2. <8	Poor practice.

Intervention:

1. **Information Education & Communication Package:** It is a lecture cum discussion on Prevention of Computer vision Syndrome, using PowerPoint & pamphlets. This lecture describes the definition, causes, signs of CVS, management & preventive measures of CVS.

2. Demonstration on Exercises to prevent Computer Vision Syndrome: This comprises of the demonstration of five exercises [1. Incessent Blinking, 2.20-20-20 rule, 3. eye rolling, 4. Palming, 5. eye breathing exercise] to prevent Computer Vision Syndrome.

Results

The analysis of **demographic variables** show that majority of the Computer Science students, 46(77%) were in the age group of 18 – 20 years & 43(72%) were Males. In regard to year of study, most of them were 2nd year students 44(73%) & 30(56%) had Computer at home.

The maximum number of students used laptop 38(63%) & most of them 39(65%) used computers for more than 2 hours in a day. The majority of the students 49(82%) did not use any preventive measures & used natural lights 39(65%) while using computer.

1. Effectivesness of iec cum demonstration on the level of knowledge among computer science students

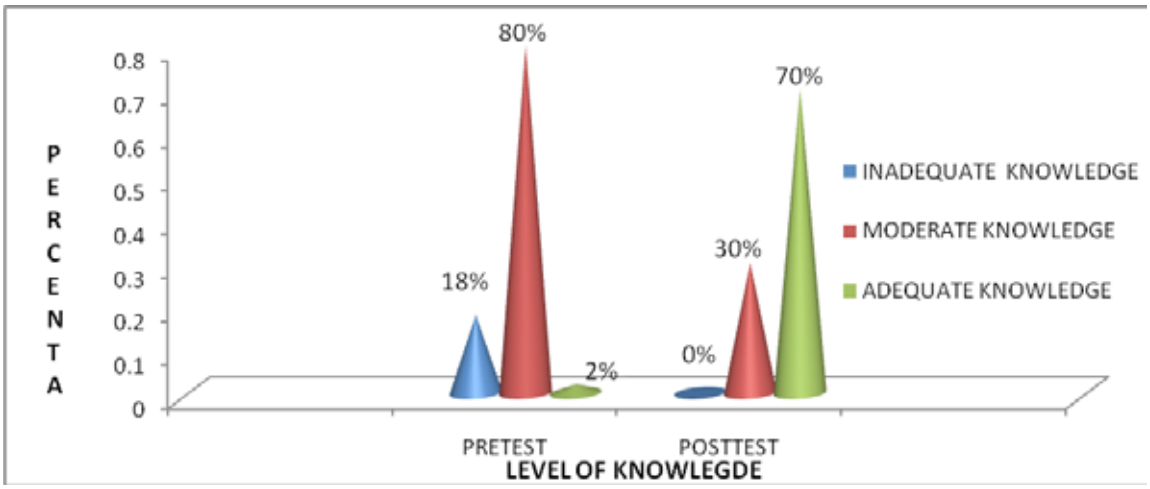

Fig. 1: Percentage distribution Pre & post test level of Knowledge among Computer Science Students N=60

Table 1: Mean & standard Deviation of Pre & post test level of Knowledge among Computer Science Students N=60

Computer vision syndrome	Mean	S.D.	Paired 't' value
Pre test	8.41	2.07	t=3.460* p= 0.001,S
Post test	14.93	2.65	

P<0.001,S-significant

2. Effectivesness of iec cum demonstration on the level of skill among computer science students

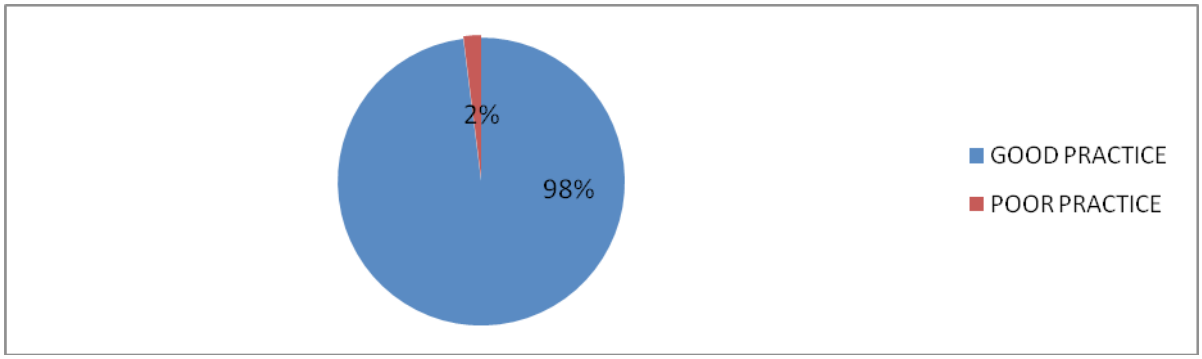

Fig. 2: Percentage distribution of Post test level of Skill among Computer Science Students N=60

Table 2: Mean & standard Deviation of Post test level of Skill among Computer Science Students N=60

Computer vision syndrome	Mean	S.D.
Post test	34	1.96

3. Correlation between post-test level of knowledge and skill regarding prevention of computer vision syndrome among computer science students N=60

Variables	Mean	S.D.	'r' Value
Knowledge	14.93	2.65	'r'= 1 P 0.001, S*
Skill	34	1.96	

***p<0.001, S-Significant

4. Association between the knowledge and skill regarding prevention of computer vision syndrome among computer science students with their selected demographic variables: The analysis showed only the gender and preventive measures while using computer had significant association with the level of skill among the computer science students.

There is no significant association between Knowledge with ny of the Demographic variables.

Discussion

1. Effectiveness of Information Education Communication cum demonstration on knowledge and skill regarding prevention of Computer Vision Syndrome: The findings of Pretest shows 18% had inadequate Knowledge,80% had moderate level of Knowledge and only 2% had adequate level of Knowledge.

The findings of Post test shows improvement in the level of knowledge, about **30%**had **moderate** level of Knowledge and **70%** had **adequate** level of Knowledge.

In regard with skill, the post test shows 98% of the students had Good practice & only 2% had poor Practice**.**

The findings were consistent with a cohort study of **Gupta R, Gour D, Meena M, 2014** conducted for the evaluation of computer vision syndrome

among 330 computer workers before and after the educational intervention for managing CVS at Bhopal. The intervention was able to decrease complaints of computer workers to 46.5%[2].

2. **Co-relation of knowledge and skill regarding prevention of computer vision syndrome:** The calculated correlation value (r=1) between knowledge and skill shows a highly **positive correlation** between post- test knowledge and skill.

The above findings clearly indicate when knowledge increase and skill also increases.

3. **Association of the selected demographic variables with the mean differed level of knowledge and skill regarding prevention of computer vision syndrome:** The analysis showed only the **gender and preventive measures while using computer** had significant association with the level of **skill** among the computer science students.

Conclusion

Computer vision syndrome is a complex of eye or vision problem. About 40% of computer users are developing computer usage related in India. The IEC educational module was proven to increase the awareness of participants and thus in turn has enhanced them to practice the preventive measures to protect their eyes in future.

Source of Support: Nil

Conflict of Interest: None declared

Ethical Clearance: The Ethical Clearance was obtained from institutional ethical review board. The samples were explained about the study purpose and confidentiality was maintained throughout the study

Acknowledgement: We would like to thank the College Principal & participants of this study for their cooperation throughout the study.

Contributors

SJJ & SR: Conceptualization of the study, collection, analysis of the data, writing the manuscript, finalized the manuscript and will act as the guarantor of the paper;

MS: Collection, analysis of the data & writing the manuscript.

References

1. Ayakutty Muni Raja, Siddharam S. Janti, Charanya Chendilnathan, Metheen Adnan. Ocular problems of computer vision syndrome: Review. Journal of Mahatma Gandhi Institute of Medical Sciences. 2015; 20(2): 134-6. 11.
2. Gupta R, Gour D, Meena M. Interventional Cohort Study for evaluation of Computer Vision Syndrome among Computer Workers. International Journal of Medicine Research. 2014. Vol:2(1):40-44. doi:10.17511/ijmrr.2014.i01.009.
3. Logaraj M, Madhupriya V, Hegde SK. Computer Vision Syndrome and Associated Factors Among Medical and Engineering Students in Chennai. Ann Med Health Sci Res. 2014 Mar-Apr; 4(2): 179–185. 10.
4. Sen. A, Richardson S. A study of computer related upper limb discomfort and computer vision syndrome. J Hum Ergol (Tokyo). 2007; 36(2): 45–50.
5. Available from: http://www. ejournalofophthalmology.com/e jo/ejo30a.html.