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Knowledge on computer vision syndrome

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Abstract

Computer vision syndrome (CVS) is a condition resulting from focusing the eyes on a computer or other display device for protracted, uninterrupted periods of time. Some symptoms of CVS include headaches, blurred vision, neck pain, fatigue, eye strain, dry eyes, irritated eyes, double vision, vertigo/dizziness, polyopia, and difficulty refocusing the eyes. A descriptive survey research design was used to assess the knowledge regarding computer vision syndrome among nursing students. A sample of 60 nursing students was selected using convenience sampling technique. Data was collected using structured questionnaire to assess knowledge regarding computer vision syndrome. Data was analyzed using descriptive and inferential statistics. The study concluded that majority of nursing students have Inadequate, to moderate, knowledge. There is a need to organize Educational program on computer vision syndrome.

Keywords: Computer vision syndrome, double vision, polyopia, computer, eyestrain

Introduction

Technological advancement has made an impact in almost every aspect of our lives especially after the availability of computer. 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 individuals experience eye discomfort and vision problems when viewing digital screens for extended periods. The level of discomfort appears to increase with the amount of digital screen use.

Worldwide it is estimated to be 60 million people who experience vision problem as result of computer use. Over 75% of young students in India and Andhra Pradesh are reportedly, face the computer vision syndrome. The National Institute of Occupational Safety and Healthy (NIOSH) stated that nearly 88% of all computer professionals will develop computer vision at some time in their lives.

The symptoms related to eye and musculoskeletal system which were reported are moderate headache (64%) bodily fatigue and tiredness (44%) mild dry eye (64%) neck and shoulder pain (69%) double vision (47%) "halos" appearing around the object (67%) and need to interrupt work frequently to rest eye (47%). Also few factors such as length of use, type of work, type of device, duration of use (hours/day) and frequency of eye blinking possess the remarkable impact on incidence of computer vision syndrome. Treatment modalities include a multidirectional approach combining ocular therapy with adjustment of the work station, proper lighting, antiglare filter, ergonomic positioning of computer monitor, ergonomic exercise and regular work breaks. This may improve the visual comfort of the computer users.

Need for Study

The rapid advancement in the technology and popularization of various gadgets and their application have make rapid changes in the exposed profiles of the population at work, at school, at home and in leisure over a few decades. Millions of people including children, college students are using computer for prolonged hours, therefore, it is important to examine potential effect on health after posture.

In 2016 a study was conducted on effect of electronic media on physical activity and physical health among school age children in selected schools at Nellore. The result of the study reveals that there is a positive correlation between electronic media and effect on physical health and it ranges from moderate to severe.

In 2014 a study on computer vision syndrome and associated factors among medical and engineering students were conducted in Chennai. Finally the result found that engineering student's prevalence of computer vision syndrome was found to be 81.9% while among Medical students it was found to be 78.6.

In the year of 2011, a study on prevalence of computer vision syndrome and dry eye in office workers was conducted. The results stated that most prevalent symptom associated with computer vision syndrome was tired eye, which did reported 40.7% of subject associating at least half the time. Computer vision syndrome is a highly prevalent condition in the general population producing symptom for extended period of time. It is strongly associated with ocular surface diseases.

In 2010 conducted the study on effect of computer in children. The result found that radio, television, movies, video games, cell phones and computer networks have assumed central roles in our children daily lives. So researcher felt there is a need to conduct study.

Problem Statement

"A Study to Assess the Level of Knowledge Regarding Computer Vision Syndrome among Nursing Students at Selected Nursing Colleges, Nellore."

Objectives

- To assess the knowledge regarding computer vision syndrome among nursing students
- To find out association between the level of knowledge regarding computer vision syndrome among nursing students with their selected socio demographic variables.

Methodology

Research Approach

The quantitative approach was adopted to determine the knowledge regarding computer vision syndrome.

Research Design

The research design used for the present study was descriptive survey research design.

Setting

The setting selected for the study was Narayana Nursing Institutions, Nellore, which is located in the Chinthareddypalem, Nellore. It is attached to Narayana medical college hospital. The college is situated at a distance of 8 km from Nellore city. The courses offered in this college are BSC Nursing, PBBSC nursing, GNM, and MSC nursing with full fledged 52 teaching faculties.

Population

The population includes nursing students, studying in nursing colleges.

Accessible Population

The accessible population of the study comprised of BSC nursing students, GNM Nursing students, PBBSC Nursing students in Narayana Nursing Institutions, Nellore.

Sample

Sample for the present study includes IV year BSC Nursing students, III year GNM Nursing students, I and II year PBBSC Nursing students.

Sample Size

Sample size for the present study is 60 nursing students

Sample Technique

Non probability convenience sampling technique was adopted for the study.

Criteria for Sampling Selection

Inclusion criteria: Nursing students who are

- Available at the time of data collection
- Studying IV BSC (N) students, III GNM(N) students, I and II PBBSC(N) students Narayana Nursing Institutions, Nellore.

Exclusion criteria: Nursing students who are

- On leave or sick at the time of data collection
- Studying other courses like I year and II year BSC (N) students, I year and II year GNM (N) students and MSC nursing.

Description of Tool

The tool was developed with the help of related literature from various text books, journals, website, discussion and guidance from experts.

The tool consist of two sections

Section-I: It deals with selected socio demographic data include age, educational qualification, and professional experience, source of information and CNE program.

Section-II: It deals with structured questionnaire with 26 questions.

Score Interpretation

Scoring system was developed as '1' marks to correct response and '0' mark for wrong response.

Table no 1: score interpretation

SL.NO	GRADE	SCORE
1.	A+	More than 85%
2.	A	More than 75%
3.	B+	More than 65%
4.	B	More than 55%
5.	C	More than 50%
6.	D	Less than 50%

Content Validity

The content validity was obtained from experts in nursing department. This tool is put to the test in pilot study.

Reliability

The reliability of the instrument was established by using spearman correlation coefficients split half method. The 'r' value is 1

Feasibility

Feasibility of tool was tested among student nurses in Narayana Nursing Institutions, Nellore by conducting pilot study.

Pilot Study

After obtaining formal permission from the principal of Narayana Nursing Institutions the pilot study was conducted

in the month of February. The pilot study was conducted among nursing students who fulfil inclusion criteria were selected by using non probability convenience sampling technique. The investigator assesses knowledge based on questionnaire. The data was analyzed by using the descriptive and inferential statistics. Based on the pilot study results concluded that tool is reliable for conducting main study.

Data Collection Procedure

The data collection procedure was carried out after obtaining formal permission from the principal Narayana Nursing Institutions. A sample of 60 nursing students was selected by using convenience sampling technique. The informed consent was obtained from the sample and confidentiality of information was assured. The investigator used structured questionnaire to assess the level of knowledge regarding computer vision syndrome among student nurses. Total 30 minutes was given to each sample to complete the questionnaire. The selected data was

organized analyzed and presented in the form of figures and tables.

Data Analysis

The data was analyzed using descriptive and inferential statistics.

Results

With regard to the frequency and percentage distribution of level of knowledge 4 (6.7%) scores A+, 2 (3.3%) scores A, 10 (16.6%) scores B+, 8 (13.4) scores B, 12 (20%) scores C, and 24 (40%) scores D grades.

With regards to mean and standard deviation of knowledge score among nursing students is 13.46 and 4.62 respectively.

Discussion

The first objective of the study is to assess the level of knowledge on computer vision syndrome among nursing students.

Table 2: frequency and percentage distribution of nursing students based on level of knowledge

Sl. No	Level of Knowledge	Nursing Students	
		Frequency (F)	Percentage (%)
1	A+	2	6.7
2	A	1	3.3
3	B+	5	16.6
4	B	4	13.4
5	C	6	20.0
6	D	12	40.0
	Total	30	100%

Table 2: shows the distribution of nursing students with regards to frequency and percentage distribution is as 2(6.7%) was A+, 1(3.3%) was A, 5(16.6%) was B+, 4(13.4) was B, 6(20%) was C, 12(40%) was D grades.

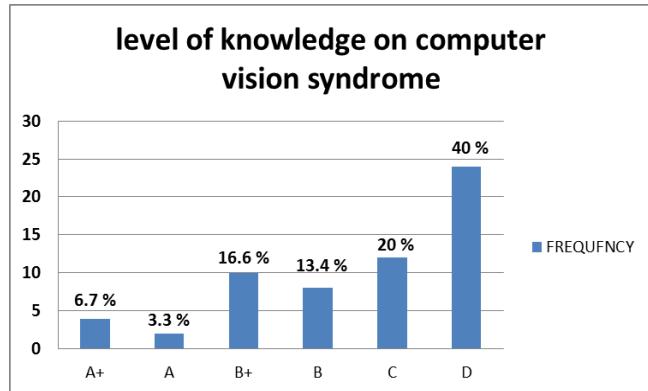


Fig 1: Percentage distribution of level of knowledge regarding computer vision syndrome among nursing students.

Mean and standard deviation of knowledge score among nursing students.

Table 3: Mean and Standard Deviation of knowledge score among nursing students.

Level Of Knowledge	Mean	Standard Deviation
Nursing students	13.46	4.62

Table no. 3: reveals the mean and standard deviation of knowledge score among nursing students as 13.46 and 4.62 respectively.

The second objective of the study is find out the association between the level of knowledge on computer vision syndrome among nursing students with their selected socio demographic variables.

There is a non-significant association between the level of knowledge and socio demographic variable such as, age, course, religion, source of information, attended any CNE program or seminars.

Conclusion

The finding of the study shows that majority of nursing students have Inadequate, to moderate, knowledge. Educational program is organized regarding computer vision syndrome to improve the level of knowledge among nursing students in Narayana nursing institution, Nellore.

Recommendation

On the level of findings of the study the following recommendation have been made,

- A similar study can be replicated on large sample size, in different settings, with in different population as longitudinal study.

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