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"A Study To Assess The Effectiveness Of An Information Booklet On Awareness Regarding Computer Vision Syndrome Among Bca Students In A Selected Metropolitan College"

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ABSTRACT
Computer vision syndrome, also referred to as digital eye strain, describes a group of eye and vision related problems that results from prolonged computer, tablet, e-reader and cell phone use. Many individuals experience eye discomfort and vision problems when viewing digital screen for extended periods. The study to aims to assess the knowledge regarding computer vision syndrome among second year BCA students in selected college of metropolitan city. A quantitative experimental approach one group pre-test, post-test design was used for this study which was conducted in selected college of metropolitan city. 30 sample was selected using non-probability convenient sampling technique. Pre-test was conducted by administering a structured interruptive questionnaire, with interpretive educative session on computer vision syndrome among second year BCA students was given on same day. Post-test was conducted on 7thday and data was analyzed using descriptive statistics to find, pre-test knowledge score on interpretation with selected baseline variables.
Analysis and interpretation give description of the study. Result shows that the level of knowledge regarding computer vision syndrome after providing information booklet is increased. The knowledge mean score of BCA students in pre-test was 8.43 whereas post-test was 14.4 with t value obtained is 10.73. The study showed that maximum students had inadequate knowledge regarding computer vision syndrome, the knowledge on computer vision syndrome has improved after the administration of information booklet was an effective teaching strategy in improving the knowledge on computer vision syndrome.

Keywords Computer Vision Syndrome, CVS, Information Booklet, Awareness, BCA Students, Digital Eye Strain

INTRODUCTION

In the era of digital revolution, the extensive use of digital devices has become an integral part of academic and professional life. Particularly among college students, prolonged screen time has raised significant health concerns. One of the most prevalent and overlooked conditions is Computer Vision Syndrome (CVS), a group of eye- and vision-related issues resulting from extended use of computers, tablets, smartphones, and e-readers. The American Optometric Association defines CVS as a complex of eye and vision problems linked to near work and screen exposure.
With 60 million computer users worldwide affected by CVS and nearly 75% of daily work reliant on digital devices, the importance of awareness and preventive practices becomes paramount. Among students, this condition can lead to decreased academic performance, physical discomfort, and long-term eye strain if left unaddressed. The current study explores whether an informational booklet could effectively improve awareness about CVS among Bachelor of Computer Application (BCA) students in a selected college in a metropolitan city.

REVIEW OF LITERATURE

The literature reflects widespread concern regarding Computer Vision Syndrome (CVS) caused by prolonged use of digital devices. Julio Cabrero-García (2015) validated the CVS-Q tool to assess workplace-related CVS symptoms. Sheppard & Wolffsohn (2018) found 70% of children aged 10–15 showed signs of CVS due to digital device use. Kumar & Kumar (2017) reported a 63.2% prevalence among Indian university students. Singh et al. (2019) demonstrated the effectiveness of an information booklet in improving eye care awareness.
Darwin León-Figueroa (2024) highlighted a global CVS prevalence of 74% during COVID-19. Rodríguez-Zamora (2023) associated ergonomic factors and screen habits with higher CVS in teleworkers. Al Tawil et al. (2018) found symptoms like neck pain and dry eyes prevalent among female students. Lema (2022) identified factors like gender, posture, and screen distance as major CVS determinants.
Meta-analyses by Fabricio Ccami-Bernal (2024) confirmed 70% global CVS prevalence. Rosenfield (2016) emphasized ergonomic corrections and awareness. Finkelstein (2016) and Tassinari (2020) linked poor screen ergonomics and lighting

to symptoms in office and remote workers. Mohamed-Noriega (2020) connected prolonged screen use with dry eye disease. Studies by Stewart (2022) and Artime-Ríos (2017) underlined low awareness and high CVS risk among students and healthcare workers, stressing preventive education and ergonomics.

NEED FOR THE STUDY

In India, the adoption of technology among the youth has exponentially increased, especially post-COVID-19 when virtual learning became the norm. Studies report that 80% of students face eye strain and 70% report headaches due to screen exposure. The lack of knowledge and preventive practices contributes to a rising prevalence of CVS, particularly in educational environments where prolonged computer use is unavoidable. Thus, it is imperative to provide students with reliable, accessible, and practical information that promotes early prevention and management of CVS.

OBJECTIVES

1. To assess the existing awareness of computer vision syndrome among BCA students.
2. To evaluate the effectiveness of an information booklet by comparing pre- and post-test knowledge scores.
3. To assess the association between selected demographic variables and knowledge level of CVS.

HYPOTHESES

- **Null Hypothesis (H_0):** There is no significant effect of the information booklet on students' knowledge about CVS.
- **Research Hypothesis (H_1):** There is a significant difference between pre-test and post-test knowledge scores after administering the information booklet.

The study adopts a general systems theory framework comprising:

- **Input:** Students' existing knowledge about CVS.
- **Throughput:** Educational intervention using an informational booklet.
- **Output:** Enhanced knowledge post-intervention as measured by post-test scores.
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RESEARCH APPROACH

A quantitative-experimental approach was used to assess the effectiveness of information booklet on awareness regarding computer vision syndrome.

RESEARCH DESIGN

A pre-experimental one group pre-test post-test design was used to assess the effectiveness of information booklet on awareness of 30 subjects selected by non-probability convenient sampling.

SETTING OF STUDY

The present study was conducted in the selected college of metropolitan city.

POPULATION:

The population for present study was BCA (Bachelor in computer application) students who are willing to participate in the study in selected college of metropolitan city.

TARGET POPULATION:

The target population for the present study was BCA (Bachelor in computer application) students who are willing to participate in the study in selected college of metropolitan city.

ACCESSIBLE POPULATION:

Accessible population for present study was the BCA (Bachelor in computer application) students at selected college of metropolitan city.

VARIABLEOFTHESTUDY

Variables are classified based on their nature action, and effects on the variables. Following variable are used in this study.

Independent variables:

In this study the independent variable refers to information booklet on computer vision syndrome.

Dependent variable:

In this study awareness regarding computer vision syndrome among BCA students.

Demographic variables:

In this study demographic variables are, age, gender, duration of computer usage, spectacles use, level of computer screen,

type of light.

SAMPLE
BCA (Bachelor in computer application) students who are willing to participate in the study in selected college of metropolitan city.

SAMPLE SIZE:
Thesamplesizeforthepresentstudywas30.

SAMPLING TECHNIQUES:
Non-probability purposive convenient sampling technique.

TOOL USED FOR THE STUDY:
In this study structured questionnaire was used to assess awareness and information booklet for giving information.

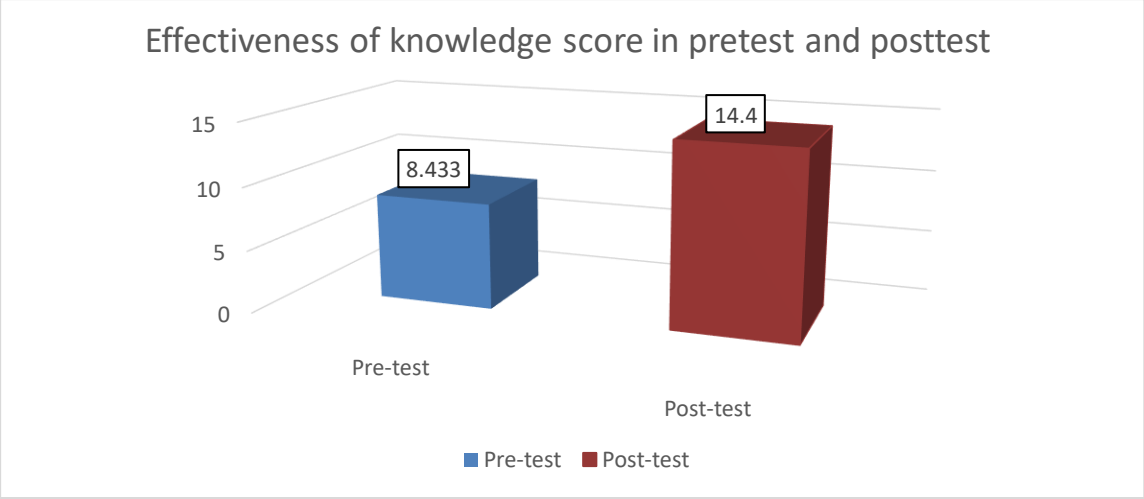
TOOL DEVELOPMENT AND VALIDATION
The tool consisted of two parts:

- Section A: Demographic data (age, gender, spectacle use, screen time, etc.)
- Section B: structured knowledge questionnaire regarding computer vision syndrome. This section contains 15 items for assessing awareness regarding computer vision syndrome. Knowledge questions (15 items related to CVS)

VALIDITY AND RELIABILITY:
The tool was validated by subject experts in nursing and public health. Pilot testing ensured reliability.

ETHICAL CONSIDERATIONS:
Ethical approval was obtained from the institutional review board. Written consent was obtained from participants

RESULTS
Regarding the distribution of sample according to the age, the majority,73.3% are age between 18-20 years; A smaller portion, 26.67% are age between21-23years;There are no students in the age group between 24-26 years**.** All100% are female students. Regarding wearing spectacles, 30%studentsusedspectaclesand70%studentsare not used spectacles. According to level of computer screen, 6.67% students use computer screen above the eye level; 60% of students use computer screen at the eye level; 33.33% of student use computer screen below the eye level. On the basis of assessment of level of knowledge in the pre-test, the majority of respondents(53.33%) scored an average while 20% had a poor score and 26.66% achieved a good score. While in the post test, there is a improvement inknowledge,with100%of respondents achieving a good score (11-15). This shows that the intervention or learning program was highly effective in enhancing the participants understanding. The mean of pre-test is 8.433 while the mean of post-test is14.4.The mean of post-test14.4 shows that information booklet on computer vision syndrome is effective.



Assessment of knowledge score in pre-test and post-test

DISCUSSION

The present study was conducted with a quantitative approach and one pre-test and post-test design. The study subject is BCA students 30 in number selected by purposive sampling techniques. A pre-test was administered to subject followed by information booklet intervention to the subjects. Followed which post-test was carried for the subjects.
The findings of the present study are discussed on the basis of demographic characteristics and objectives.

CONCLUSION

The present study was conducted to evaluate the effectiveness of information booklet on computer vision syndrome among BCA students in selected college of metropolitan city. In this study, one group of pre-test and post-test designed used 30 subjects were selected through purposive sampling technique. Data collected by using the structured questionnaire. The data were analyzed and interpreted by applying statistical methods. The conclusion, were drawn on the bases of the finding of the study, they are as followed.
The information booklet was significantly effective on knowledge regarding computer vision syndrome.

SUMMARY

The present study titled "A study to assess the effectiveness of information booklet on awareness regarding computer vision syndrome among BCA students in selected college of metropolitan city". The conceptual framework for the present study was developed from general system theory. It provided the comprehensive outlook for the study. The investigator one group for pre-test and post-test designed. The study was conducted at selected college of metropolitan city. 30 subjects were selected conveniently. A structured questionnaire was used in present study for data collection which consists of 2 sections. A for demographic details of the subjects, B for the questionnaire for assessing the knowledge of the subject. The tool was validated from the experts. A pilot study was carried out to ensure feasibility of the main study.

RECOMMENDATIONS

- Replicate the study on a larger scale with diverse student groups.
- Conduct longitudinal studies to assess long-term retention and behavior change.
- Develop e-learning modules or apps based on CVS prevention.

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