
“A STUDY TO ASSESS THE RISK STATUS OF VISUAL DISTURBANCE SYMPTOMS AMONG SHARDA EMPLOYEES WITH A VIEW TO DEVELOP AN INFORMATION BOOKLET FOR PREVENTION OF COMPUTER VISION SYNDROME”

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Abstract

“A study to assess the risk status of visual disturbance symptoms among Sharda employees with a view to develop an information booklet for prevention of computer vision syndrome” was the title of a research project.

Objectives: The study's goals to assess the risk status of visual disturbances symptoms among sharda employees, to find out the association between risk status score with selected demographic variables and to develop an information booklet on prevention of computer vision syndrome.

Methodology: A quantitative research approach with a descriptive cross-sectional research design was adopted for the study. Both academic and non-academic staff of Sharda University was the study's sample. Data analysis was done using a sample size of 120 and was based on the study's objectives and hypothesis. 12-item structured questionnaire was the technique that was employed.

Result: The study concluded that Majority (**52.5%**) of employees were having mild symptoms, around (**40.8%**) of employees having moderate symptoms and (**6.7%**) of them had severe symptoms. **Conclusion:** The study concluded that there was no association found between the visual disturbances along with the demographic variables and the booklet given was useful for the employees.

Key words: Risk condition, visual disturbance, computer vision syndrome.

Introduction

The American Optometric Association (AOA) defines "Computer Vision Syndrome" (CVS) as a collection of eye and vision problems caused by near-focused activities that occur before, after, or in connection with use computer ^[1, 2] and consists of a group of visual cues that appear after prolonged use of a Video Display Terminal (VDT), which occurs when the demands of the task exceed the viewer's capacity. Dry and itchy eyes, eye strain or fatigue, blurred vision, red and burning eyes, watery eyes, double vision, headache, sensitivity to light, difficulty concentrating, and changes in colour perception are all CVS symptoms. ^[2,3,4] It is estimated that there are about 60 million people with CVS worldwide and one million new cases are reported each year. ^[3,4,5] As a result, CVS is expected to continue to have a large and growing impact on reducing workplace productivity, as well as the quality of life of IT office workers. ^[6,7,8] Therefore, it is likely that South Asian office workers who use computers also have high rates of CVS, leading to reduced productivity and reduced quality of life. As in other countries, the few studies in South Asia on the prevalence of CVS available in the literature are small-scale and based on a single institution. It is reasonable to assume that the prevalence and severity of CVS will increase with our society's dependence on computers, online services, and the Internet. Instead of a temporary fix, we need prevention.

We needed a comprehensive treatment strategy that included not only eye medication but also patient education and "friendly" work stations. ^[9,10]

Objectives

- To assess the risk status of visual disturbance symptoms among Sharda employees.
- To find out the association between risk status score with selected demographic variables.
- To develop an information booklet on prevention of computer vision syndrome.

Research Hypothesis:

- **H₀₁:** There will be no considerable variable association between risk status scores with selected socio-demographic variables.

Methodology:

A quantitative research approach with a descriptive cross-sectional research design was adopted for the study. Both academic and non-academic staff of Sharda University was the study's target audience. Data analysis was done using a sample size of 120 and was based on the study's objectives and hypothesis. 12-item structured questionnaire was the technique that was employed.

Ethical Consideration:

Administrative approval was received from the following individuals:

- Dean/Principal, Sharda School of Nursing Science and Research, Sharda University
- Sharda University's ethical review board.

- The institutions' administrators will provide written, official permission.
- Participant permission obtained after being fully informed.

Inclusive criteria:

- Employees who are willing to participate in the study
- Employees who are exposing to computer screen.

Exclusive criteria:

- Employees who are not willing to participate in the research study.
- Employees who are not expose to computer screen.

The study employed the following instruments to gather the data:

- **Tool 1:** Demographic profile
- **Tool 2:** Risk status assessment tools for visual disturbance symptoms

Statistical Analysis

Using the statistical program EZR - Version 2.4, descriptive and inferential statistics were used to analyse the data according to the objectives and hypotheses.

Result

The study concluded that Majority (**52.5%**) of employees were having mild symptoms, around (**40.8%**) of employees having moderate symptoms and (**6.7%**) of them had severe symptoms. The Kruskal Wallis test was used to determine whether there was a statistically significant relationship between the participant's demographic data and their risk status for visual disturbance.

Table1: Association between risk status of visual disturbance score with selected demographic variables of the participants.

(N=120)

Background characteristics	Risk status of visual disturbance scores			H value Kruskal Wallis test	p value
	N	Median	IQR(Q3,Q1)		
Age in years				1.426	.699 (NS)
21-30	40	10.50	11(17.0,6.0)		
31-40	62	12.50	12.25(19.2,7.0)		
41-50	11	14.00	8(18.0,10.0)		
>50	7	12.00	13(19.0,6.0)		
Gender				1.441	.230 (NS)
Male	64	10.50	13(19.0,6.0)		
Female	56	13.50	10.8(18.0,7.2)		

Educational status					
Undergraduate	7	4.00	10(12.0,2.0)	7.526	.023(NS)
Postgraduate	51	12.00	12(19.0,7.0)		
Above of postgraduate	62	12.50	12.3(19.0,6.7)		
Marital status					
Single	40		13.5(19.7,6.2)	.010	.920 (NS)
Married	80		11.8(18.0,6.2)		
Working hours with computers per day [work place]					
3-5 hours per day	24	13.00	12.7(19.7,7.0)	3.998	.262 (NS)
6-9 hours per day	79	10.00	11(17.0,6.0)		
9-11 hours per day	13	16.00	17(23.5,6.5)		
More than 11 hours per day	4	19.50	11.5(21.5,10.0)		
Years of experience					
1-3years	33	10.00	13.5(19.5,6.0)	1.598	.660 (NS)
4-6years	27	14.00	14(20.0,6.0)		
7-9years	14	10.00	7.5(14.5,7.0)		
10years and above	46	12.50	12.2(18.2,6.0)		
Monthly income					
Below 20,000	11	9.00	15(20.0,5.0)	1.415	.702 (NS)
21,000-30,000	23	11.00	11(17.0,6.0)		
31,000-40,000	18	7.50	15(22.0,7.0)		
/Above 40,000	68	14.00	12.8(19.00,6.2)		
Duration of usage of computers at home					
2 hours	71	12.00	11(17.0,6.0)	.946	.814 (NS)
3 hours	29	10.00	12.5(19.5,7.0)		
4 hours	8	12.50	13.7(19.7,6.0)		
5 hours	12	16.00	16(21.5,5.5)		
State which department you are working					
Medical department	33	10.00	14(20.0,6.0)	1.771	.413 (NS)
Non-medical department	57	14.00	11.5(19.0,7.5)		
Others	30	10.50	11.3(17.0,5.7)		

(p>0.05-non-Significant level, S: Significant, NS: Non-Significant)

Table 1 displays the correlation between the demographic characteristics of the chosen individuals and the risk status of visual disturbance scores. The results of the study revealed no statistically significant relationship ($p > 0.05$) between the risk status of the visual disturbance score and some participant demographic factors. The H_{01} null hypothesis is accepted by the researcher.

Discussion

The study's findings indicated that most of the participants **52.5%** had mild symptoms, roughly **40.8%** had moderate symptoms, and **6.7%** had severe symptoms. The most popular questionnaire and claim utilized in this study has a sensitivity of **85%** and a specificity of **72%** in identifying digital eye strain, according to a subsequent study backed by Ahuja, Stephen et al in 2021. For detecting dry eye in users, it likewise has a high positive predictive value of **85.6%**.^[11]

Conclusion

The primary objective of the study was to assess the risk status of visual disturbance symptoms among Sharda employees. Data were collected from 120 samples using convenience sampling technique. It found that there was no statistically significant association ($p > 0.05$) between the risk status of visual disturbance scores and some of the participants' demographic variables.

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