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A Study to Assess the Effectiveness of Interventional Package on Computer Vision Syndrome Among Computer Users At Selected Institutions, Silvassa, Dadra and Nagar Haveli

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ABSTRACT

Background: Computer vision syndrome or digital eye strain as a group of eye and vision related problems that result from prolonged use of computer. Globally, at least 2.2 billion people have a near or distance vision impairment. It is estimated that nearly 60 million people suffer from CVS globally, and that new cases occur each year. However, interventional package on computer vision syndrome will help computer users to enhance knowledge and prevention of Computer vision syndrome.

Aim: This study aimed to assess the effectiveness of interventional package on computer vision syndrome among computer users.

Methodology: An experimental research design to assess the effectiveness interventional package on computer vision syndrome among computer users. Simple random sampling was used to select 100 samples and equally divided into control and experimental group. Self reported checklist was used to collect data.

Result: The analysis of the study revealed In survey had done among 150 subjects, the maximum number of subjects 93 (62%) had mild level, 34 (22.66%) subjects had moderate and 4 (2.66%) subjects had severe level of computer vision syndrome and 19 (12.66%) subjects had no computer vision syndrome. The majority of subjects belonged to 20-30 years of age. 42% belonged to female category. 47.33% were bachelor degree. 58.66% were having 1-5 year of experience and 90% were belongs to Hindu religion.. In experimental group the pre test mean score was 9.18 with standard deviation of 2.134 and post test mean score was 7.16 with standard deviation of 2.044 and mean difference was 2.02. The obtained 't' value (14.28) was significance at p <0.0007 level. Gender and educational qualification have significant association with the level of computer vision syndrome.

Conclusion: The result showed that there was significant decrease level of computer vision syndrome among computer users in experimental group after administration of interventional package.

Keywords: Computer vision syndrome, Interventional package, Ophthalmic exercise

INTRODUCTION:

Vision is our most precious sense. Our eyes are in constant use every waking minute of every day. The way we use our eyes can determine how well we work throughout our lifetime. Over eighty percent of

our learning is mediated through our eyes, indicating important role.
The human eye is remarkable. Although it is small in size, the eye arguably provides us with the most important of the five senses-visions. Vision occurs when light enters the eye through the pupil. With help from other important structures in the eye, like the iris and cornea, the appropriate amount of light is directed towards the lens.

NEED OF THE STUDY :

Globally, at least 2.2 billion people have a near or distance vision impairment. In at least 1 billion of these, vision impairment could have been prevented or is yet to be addressed. Vision impairment affects people of all ages, with the majority being over the age of 50 years. Vision impairment and blindness can have major and long-lasting effects on all aspects of life, including daily activities, interacting with the community, school and work place including the ability to access public services. A persons' experience of vision impairment varies depending upon multiple factors.
According to National Institute for Occupational Safety and Health, high school and college students are the heavy computer users. They are experiencing computer vision syndrome too, and the care provided might mean the difference between the academic success and failure for many of them.

OBJECTIVES :

- To assess the level of computer vision syndrome among computer users.
- To determine effect of interventional package on computer vision syndrome among computer users of experiment and control group.
- To find association between level of computer vision syndrome of computer users and selected demographic variable among computer users.

HYPOTHESES:

Null Hypotheses:

- Ho1:There is no significant mean difference between pre test and post test score of computer vision syndrome on experimental and control group of computer users at 0.05 level of significance.
- Ho2: There is no significant association between level of computer vision syndrome and selected demographic variables of computer users at 0.05 level of significance.

Research Hypotheses:.

- Ha1:There is significant mean difference between pre test and post test score of computer vision syndrome on experimental and control group of computer users at 0.05 level of significance.
- Ha2: There is significant association between level of computer vision syndrome and selected demographic variables of computer users at 0.05 level of significance.

RESEARCH DESIGN/METHOD :

The research design used in the present study was experimental research design (two group pre test, post test design) was used. The main focus of the study was to assess the effectiveness of interventional package on computer vision syndrome among computer users at selected institutions, Silvassa. A quantitative quasi experimental research design was adopted and samples were allotted in experimental group (n=50) and control group (n=50) by simple random sampling technique. Self reported checklist was used to collect the data.

VARIABLES:

The variable include in the study are dependent and independent variables. In present study dependent variable is computer vision syndrome among computer users and independent variable is the interventional package.

Demographic variables are age in years, gender, educational qualification, years of experiencing using computer in years, designation, religion and using computer per day in hours.

INCLUSION CRITERIA :

- Those who are working on computer at least 6 hours per day.
- Computer users who are having mild and moderate level of computer vision syndrome.
- Computer users who are present at the time of data collection.
- Computer users who are willing to participate in the study.
- Those who could able to read and write English, Hindi.

EXCLUSION CRITERIA :

- Computer users with other vision problem or disease condition like cataract, conjunctivitis.
- Computer users who are having severe level of computer vision syndrome.
- Computer users who are not willing to participate in the study.
- Those who have already practicing eye related exercises.

TOOLS USED IN THE STUDY :

In present study self reported checklist was used to collect the data. Tool consist of two sections:

Section: A – Demographic Variables:

The demographic data consist of age in years, gender, educational qualification, year of experience using computer, designation, religious, duty hours per day, average use of computer/day.

Section: B- Self reported checklist

This part for data collection consists of 20 questions related to assessment of level of computer vision syndrome. Based on the obtained data the investigator identified the participants who had mild, moderate or severe level of computer vision syndrome. Score was given according to predetermined criteria as for YES indicate ‘1’ and NO indicate ‘0’.The total scored is interpreted as follows : Normal=0-5, Mild=6-10, Moderate=11-15 and severe= more than 15.

DATA COLLECTION PROCEDURE :

First brief introduction of self and explanation of the purpose of the study was given to the sample. During the data collection period the investigator established a good rapport with the participants who participated in the study. Explained the study’s purpose, duration, experimental procedures, alternatives , risks , benefits, and that it is his or her right to ‘Withdraw’ the study or procedure at any time.

For conducting survey research 150 sample were selected and assessed the level of computer vision syndrome. Among them by simple random sampling technique 100 sample (50 control group & 50 experimental group) were selected by lottery method. Interventional package was given to experimental group and after 10 days post test have done for both groups.

ANALYSIS AND FINDINGS :

The data findings based on the objectives have been organized and finalized according to the plan for data analysis and are presented under the following sections:

SECTION- I: Description of demographic variables of computer users.

SECTION-II: Assessment of level of computer vision syndrome among computer users.

SECTION-III: Effectiveness of interventional package on computer vision syndrome among experimental and control group.

SECTION –IV: Association between level of computer vision syndrome of computer users with their selected Demographic variables.

SECTION –I: DISCRIPTION OF DEMOGRAPHIC VARIABLES OF THE COMPUTER USERS

TABLE 1: Frequency and percentage distribution of subjects based on selected demographic variables. N=150

Sr. No	Demographic variables	Frequency	Percentage
1	**Age in years**		
	20-30 yr	86	57.33
	31-40 yr	56	37.33
	41-50 yr& above	8	5.33
2	**Gender**		
	Male	63	42
	Female	87	58.00
3	**Education qualification**		
	Diploma	44	29.33
	Bachelor	71	47.33
	Master	30	20
	Other	5	3.33
4	**Year of experience**		
	1 month to 5 yr	88	58.66
	6 to 10 yr	48	32
	11 to 15 yr	10	6.66
	Above 15 yr	4	2.66
5	**Designation**		
	Accountant	16	10.66
	Data operator	48	32.00
	Computer assistant	21	14
	Registration	14	9.33
	Other	51	34.00
6	**Religion**		
	Hindu	135	90
	Muslim	5	3.33

	Christian	10	6.66
7	**Use of computer per day**		
	6 to 10 hr	150	100

SECTION-II: ASSESSMENT OF LEVEL OF COMPUTER VISION SYNDROME AMONG COMPUTER USERS

TABLE: 2 : Frequency and percentage distribution of subjects based on the level of computer vision syndrome. N=150

Category	Frequency	Percentage
Normal	19	12.66%
Mild	93	62%
Moderate	34	22.66%
Severe	4	2.66%

Table 2-Indicates that, among 150 samples, the maximum number of subjects 93 (62%) had mild level ,34 (22.66%) subjects had moderate ,and 4 (2.66%) subjects had severe level of computer vision syndrome 19 (12.66%) subjects were not having any symptoms.

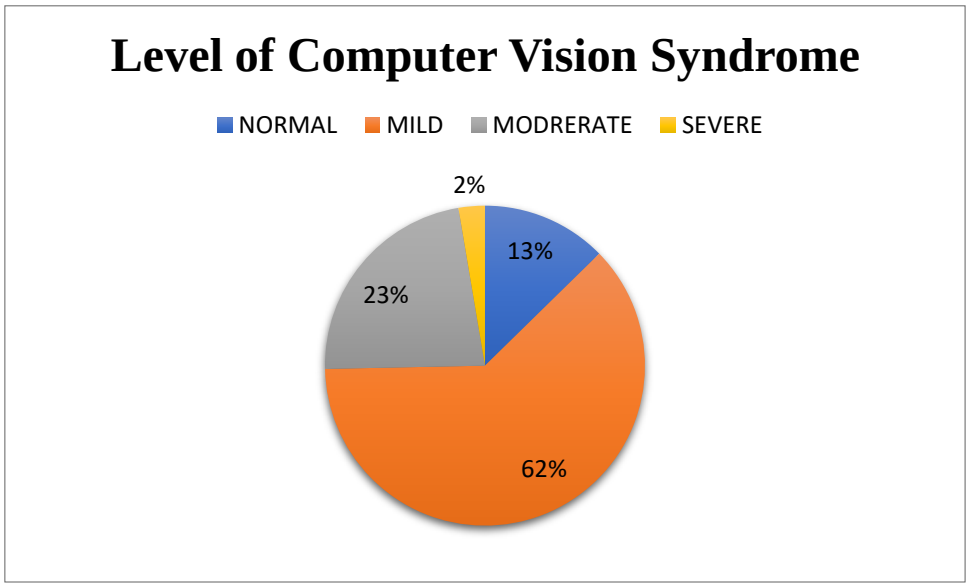

FIGURE: Percentage wise distribution of subjects based on level of computer vision syndrome

SECTION – III : EFFECTIVENESS OF INTERVENTIONAL PACKAGE ON COMPUTER VISION SYNDROME AMONG EXPERIMENTAL AND CONTROL GROUP

TABLE : 3 Analysis of paired t test to calculate experimental group pretest and post test level of Computer Vision syndrome n=100

Experimental Pre test		Experimental Post test		Mean difference	't' value	p-value
Mean	**SD**	**Mean**	**SD**			
9.18	2.134	7.16	2.044	2.02	14.28	0.0007(S)

*P=0.05

TABLE:4 Analysis of paired t test to calculate control group pretest and post test level of Computer Vision syndrome. n=100

Control Pre test		Control Post test		Mean difference	't' value	p-value
Mean	SD	Mean	SD			
8.82	1.599	8.78	1.632	0.04	0.628	0.5325(NS)

*P=0.05

TABLE : 5 Analysis of unpaired t test to calculate experimental group and control group pretest level of Computer Vision syndrome n=100

PRE-TEST	Mean	SD	't' Value	P- value	Level of significance
Experimental group	9.18	2.135	0.954	0.1711	NS
Control group	8.82	1.599			

P=0.05

TABLE : 6 Analysis of unpaired t test to calculate experimental group and control group posttest level of Computer Vision syndrome n=100

Post-test	Mean	SD	't' Value	P- value	Level of significance
Experimental group	7.16	2.044	4.379	0.00015	S
Control group	8.78	1.632			

P=0.05

SECTION – IV: ASSOCIATION BETWEEN LEVELOF COMPUER VISION SYNDROME AMONG COMPUTER USERS WITH THEIR SELECTED DEMOGRAPHIC VARIABLES.

TABLE 7: Association between level of computer vision syndrome among Computer users with their demographic variables. n=150

DEMOGRAPHIC VARIABLES	> MEDIAN	≤ MEDIAN	TOTAL	CHI SQUARE VALUE	DEGREE OF FREEDOM	P VALUE	LEVEL OF SIGNIFICANCE
Age in years							
25-30 Yr	40	46	86	1.8021	2	0.4061	NS
31-40 Yr	22	34	56				

41-50 Yr& above	2	6	8				
Gender							
Male	33	30	63	4.1902	1	0.0406	S
Female	31	56	87				
Education Qualification							
Diploma	27	17	44	9.0242	3	0.0289	S
Bachelor	24	47	71				
Master	11	19	30				
Other	2	3	5				
Year of experience							
1 month to 5 Yr	38	50	88	1.6829	3	0.6407	NS
6 to 10 Yr	23	25	48				
11 to 15 Yr	3	7	10				
Above 15 Yr	1	3	4				
Designation							
Accountant	5	11	16	8.9519	4	0.62313	NS
Data operator	23	25	48				
Com assistant	7	14	21				
Registration	2	12	14				
Other	27	24	51				
Religion							
Hindu	61	74	135	4.7269	2	0.0940	**NS**
Muslim	2	3	5				
Christian	1	9	10				
Use of com per day							
6 to 10 hr	64	86	150	0	0	0	NS

P=0.05

Table 7 : Indicates that, In this study , the p value of demographic data such as gender (0.0406), educational qualification (0.0289) have significant association with p<0.05 level of significance. Other variables like age (0.4061), year of experience (0.6407),designation (0.62313), religion (0.0940) and use of computer per day were not having significant association with level of computer vision syndrome at p<0.05 level of significance.

CONCLUSION:

The present study was conducted to assess the effectiveness of interventional package on computer vision syndrome among computer users at selected institutions of Silvassa. Based on findings, computer have mild, moderate and severe level of computer vision syndrome. The development of health literacy, participants counseling and ophthalmic exercises much needed. Intervention regarding computer vision syndrome help to reduce level of computer vision syndrome among computer users. Proper maintaining

good posture, use 20-20 rule, ophthalmic exercises etc. were help to reduce the level of computer vision syndrome.

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