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“A Study To Assess The Effectiveness Of Video Assisting Teaching Programme On Knowledge Regarding Prevention Of Computer Vision Syndrome Among 4th Year Computer Engineering Students At Selected Engineering Colleges Of The City.”

1. Ms. Namrata Chandrakant Kadam, 2. Mrs. Gnanadhinahari 3. J. Dr. Jitendrabelok
 1. Assistant professor, 2. principal 3. Vice principal
 1. Kamalnayan Bajaj Nursing College, Chh. Sambhajinagar. 2. Kamalnayan Bajaj Nursing College, Chh. Sambhajinagar. 3. Kamalnayan Bajaj Nursing College, Chh. Sambhajinagar

ABSTRACT- INTRODUCTION: In this modern world everywhere we can see each and every individual either with a computer or mobile phone, this may make many works simpler, time saving, etc. but on the other side there is also certain ill effects, among that one of the major problem that is increasing silently is “Computer Vision Syndrome.” It is not a single problem but it is a group of problems associated with it and it may also vary from each individual. Technology (including both computational and non-computational systems) has helped to bridge a global gap during an age of globalization. This bridge has allowed multitudes to learn about the world, and connect with others, in ways that were previously impossible. Technology has both eliminated a gap and created one. Virtual distance is the phenomenon where people are physically together but detached from each other due to being completely absorbed with their technological device, such as a laptop or Smartphone/tablet (mobile device).

STATEMENT OF THE PROBLEM: “A study to assess the effectiveness of video assisting teaching programme on knowledge regarding prevention of computer vision syndrome among 4th year computer engineering students at selected engineering colleges of the city.”

OBJECTIVES OF THE STUDY- 1) To assess the knowledge regarding prevention of computer vision syndrome among 4th-year Computer engineering students at selected engineering colleges of the city. 2) To assess effectiveness of video assisted teaching program on knowledge regarding prevention of computer vision syndrome among 4th year Computer engineering students at selected engineering colleges of the city. 3) To find out association of pre-test knowledge score with selected demographic variable on knowledge regarding prevention of computer vision syndrome among 4th-year Computer engineering students at selected engineering colleges of the city **HYPOTHESIS-H₀:** According to K. Sharma (2019) A hypothesis is a formal tentative statement of the expected relationship between two or more variable under study.

The proposed studies include following null hypothesis,

H₀- There will be no significant effect of video assisting program on level of knowledge regarding prevention of computer vision syndrome among 4th year computer engineering students in selected engineering colleges of the city. **H₀₁-** There will be no significant association between pre-test

knowledge score with selected demographic variable on knowledge regarding prevention of computer vision syndrome among 4th year computer engineering students in selected engineering colleges of the city. **METHODOLOGY:** 400 students were selected using simple random sampling with the computer-generated random number table. The researcher introduced himself and explained the purpose of the study. Informed consent was obtained from the samples. Pretest was conducted by using structured knowledge questionnaire on computer vision syndrome. After assessing the pretest knowledge, video assisted teaching was administered regarding on prevention of computer vision syndrome for 30- 40 minutes.

RESULTS OF THE STUDY: Result of the study was found that video assisted teaching is highly effective in improving the knowledge on prevention of computer vision syndrome among computer engineering students. The overall pretest mean knowledge score was 10.78 with standard deviation of 2.38 and the overall post test mean knowledge score was 18.26 with

standard deviation of 2.42. The difference between pre and post- test knowledge score is 7.48 and the paired t test value 44.07 which was statistically at $P = <0.001$. There was an association with previous academic percentage ($\chi^2=18.505$, $p=0.05$), reason for computer use ($\chi^2=13.567$, $p=0.016$) is significantly associated with their pre-test knowledge score.

Keywords: Computer vision syndrome, Knowledge, Engineering students.

RESEARCH METHODOLOGY:

RESEARCH APPROACH: According to **K Sharma (2018)** research approach involves the description of the plan to investigate the phenomenon under study in a structured (quantitative), unstructured (qualitative) or combination of the two methods (quantitative-qualitative integrated approach). The approach helps to decide about the presence or absence of randomization as well as manipulation and control over variables, in addition it also helps to identify the presence or absence of control groups or comparison.

In the proposed study in order to achieve objective of study quantitative approach was considered appropriate as the investigator aimed to find out the effectiveness of video assisting teaching programme on knowledge regarding prevention of computer vision syndrome among 4th year computer engineering students.

RESEARCH DESIGN: **Polit and beck (2016)** States that the research design is the researchers overall plan for obtaining answers to the research question or for testing the hypothesis. Research design is the overall plan for addressing a research question including specification for enhancing the integrity of the study. In the proposed study the designed adapted is pre-experimental design One group pretest post design was adapted

Population and Sample:

POPULATION: Engineering College students in selected engineering colleges of the city

SAMPLE: According to **K. Sharma (2019)** sample may be defined as representative unit of a target population, which is to be worked upon by researcher during their study in other words sample consists of subset of units which comprise the population selected by investigators or researchers to participate in the research projects.

In the proposed study sample are 400, 4th year computer engineering students studying selected engineering colleges of the city

SAMPLING TECHNIQUE: According to **Polit Hungler (2021)** sampling refers to the process of selecting of population to represent the entire population.

In this study, simple random sampling technique was used. Simple random sampling is a basic probability sampling technique was used to select the samples for the present study. In this sampling technique number of sampling units are selected at randomly from the population in such way that each

population element has an equal chance of being selected as sample (Basavanthappa, 2014).

SAMPLE SIZE: The sample size taken for this study is 400.

Data and Sources of Data

SETTINGS OF THE STUDY: Polite and beck (2008) State that setting is “physical location and condition in which data collection takes place in a study”. Setting refers to the area where the study was conducted. The proposed study was carried out selected engineering colleges of the city.

Theoretical framework

According to Suresh k. Sharma (2019) conceptual framework is a presentation of logically constructed concept to provide general explanation of the relationship among the concepts of the research study, without using a single existing theory. Conceptual framework are usually constructed by using researchers own experiences, previous research findings or concepts of several theories or models. The conceptual framework indicates how the research views the concepts involved in a study—especially the relationships among concepts. Conceptual framework presents logically constructed concepts to provide a general explanation of the relationship among the concepts of the research study. Concepts are the building stuff beam context, input, process, product model. Concepts are words or terms that symbolize some aspect of reality. A conceptual framework helps to explain the relationship between concepts, selected from several theories, from previous research results or from the researchers own experiences. To describe ether relationship of concepts in this study, Stuffle Beam CIPP (Context, Input, Process, and product) Model.

Input -This matter, and information that enter the system. The Engineering student are a system and have inputs within the system itself. In the present study, the input refers to the learners or target group with their characteristics like Age, Gender, Types of the family, Income of parents, Duration of computer use per day, and Reason for computer us. **Process** is the use of biologic, psychological and socio-cultural subsystems to transform the inputs. In the present study, process refers to the assessment of knowledge regarding Prevention of computer vision syndrome by Structured knowledge questionnaire. And administering Video assisted teaching programme as an intervention. **Product** is the return of matter, energy and information to the environment in an altered state affecting the environment. **Output** In this study, output refers to the obtained knowledge scores after intervention in post test. **Feedback** is the information of environmental responses to the system’s output, which is used by the system in adjustment, correction and accommodation to interact with the environment. Feedback was not assessed in this study

Statistical tools and econometric models PREPRATION OF TOOL: TOOL PREPARATION

On reviewing the literature, it is found that the existing instruments were not appropriate for assessing the knowledge on computer vision syndrome among engineering students. Therefore, knowledge questionnaire on computer vision syndrome on was developed. The review helped the investigator to plan the content matter of the tool.

DESCRIPTION OF THE TOOL: After considering the suggestion and modification of the tool by the experts; the final tool consists of two parts Section A: Demographic Performa

Section I: : Distribution of the subjects according to socio-demographic variables.

Section II: Assessment of pre-test level of knowledge regarding prevention of computer vision syndrome

SectionIII: Assessment of posttest level of knowledge regarding prevention of computer vision syndrome.

Section IV: Comparison of pre and posttest knowledge regarding prevention of computer vision syndrome.

Section V: Association between the selected demographic variable and the pre test knowledge regarding prevention of computer vision syndrome.

Distribution of the subjects according to socio demographic Variables.

n=400

Demographic variables		f	%
Age	21-23	281	70.2
	24-26	119	29.8
Gender	Male	251	62.7
	Female	149	37.3
Type of family	Nuclear	187	46.8
	Joint	213	53.3
Family Monthly Income	Less than 10,000	44	11.0
	10001-20000	19	4.8
	20001-30,000	105	26.3
	30,001 and above	232	58.0
Previous academic percentage	50-60%	134	33.5
	70-80%	221	55.3
	Above 90%	45	11.2
Duration of computer use per day	1 to 3 hrs	143	35.8
	4 to 6 hrs	113	28.2
	7 to 9 hrs	144	36.0
Reason for computer use	Study purpose	225	56.3
	Entertainment purpose	119	29.7
	Playing purpose	56	14.0

TABLE 4.1: Demographic Profile

Table No 4.1 shows the Socio-demographic information of among 4th year Computer engineering students. Regarding age majority of the computer engineering students 281 (70.2%) belongs to the age group of 21-23 years. Regarding gender majority of the computer engineering students 251 (62.7%) were male. Regarding type of family majority of the computer engineering students 213 (53.3%) belongs to joint family. Regarding previous academic performance majority of the computer engineering students 221 (55.3%) belongs to joint family. Regarding duration of computer use per day majority of the computer engineering students 144 (36%) using computer 7-9 hrs per day. Regarding reason for computer use majority of the computer engineering students 225 (56.3%) using computer for study purpose.

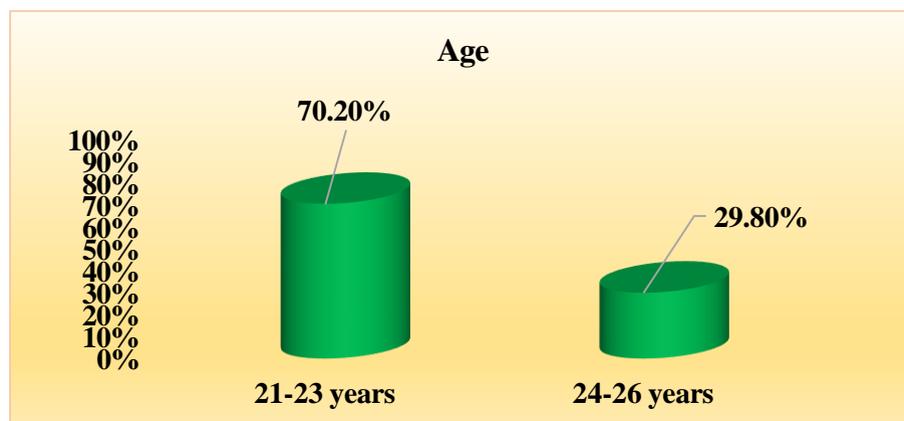


FIGURE 4.1 SIMPLY CYLINDRICAL DIAGRAM SHOWING THE DISTRIBUTION OF AGE

The above figure no 4.1 shows regarding age majority of the computer engineering students 70.2% belongs to the age group of 21-23 years while 29.80 % of them belongs to the age group of 24-26 years.

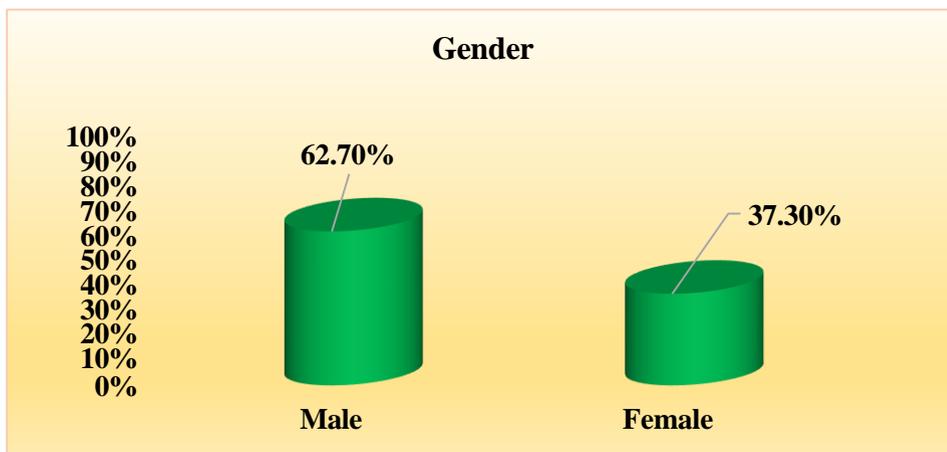


FIGURE4.2: SIMPLE CYLINDRICAL DIAGRAM SHOWING THE DISTRIBUTION OF GENDER

The above figure no 4.2 shows regarding gender majority of the computer engineering students 62.7% were male while 37.30 % of them were female.

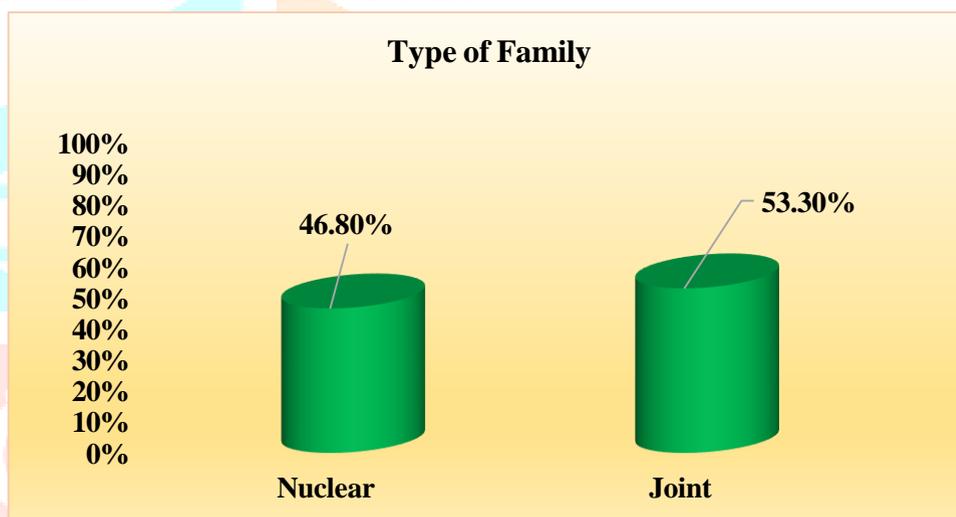


FIGURE4.3: SIMPLE CYLINDRICAL DIAGRAM SHOWING THE DISTRIBUTION OF TYPE OF FAMILY

The above figure no 4.3 shows regarding type of family majority of the computer engineering students 53.3% were belongs to joint family while 46.8% of them belongs to nuclear family.

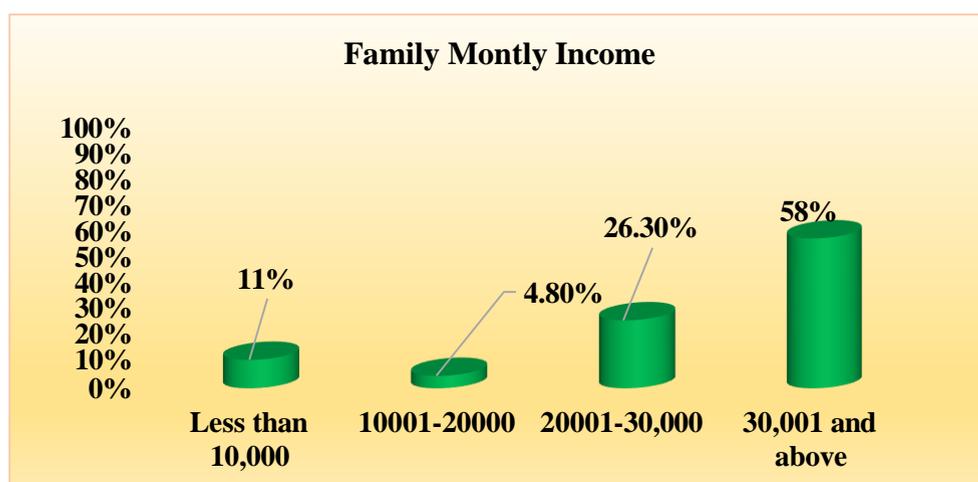


FIGURE4.4: SIMPLE CYLINDRICAL SHOWING FAMILY MONTHLY INCOME

The above figure no 4.4 shows regarding family monthly income majority of the computer engineering students 58% had family monthly income of Rs 30,001 and above while 11%, 4.8%, 26.30% had family monthly income of Rs Less than 10,000, Rs 10,001-20,000, Rs 20,001-30,000 respectively.

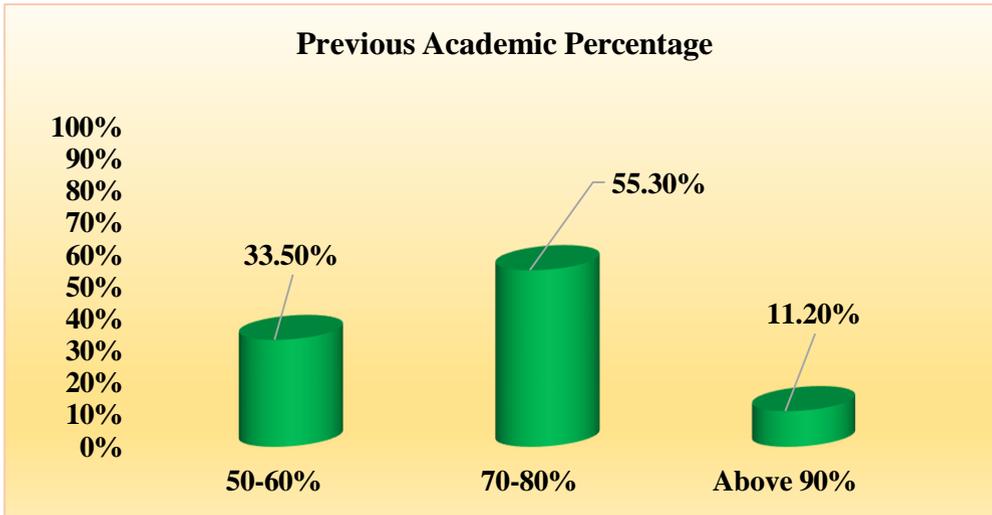


FIGURE4.5: SIMPLE CYLINDRICAL DIAGRAM SHOWING PREVIOUS ACADEMIC PERCENTAGE

The above figure no 4.5 shows regarding previous academic percentage majority of the computer engineering students 55.3% had 70-80 percentage while 33.50%, 11.20% of them had 50-60 percentage, above 90 percentage respectively.

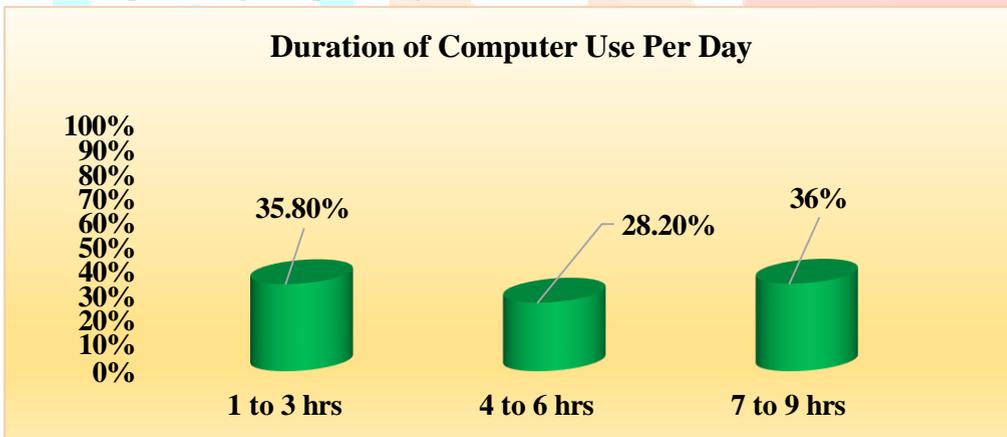
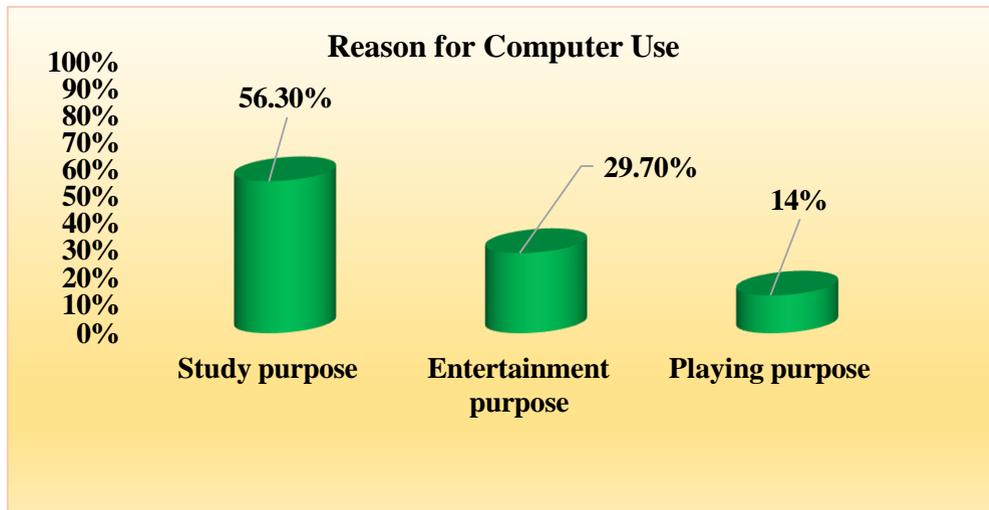


FIGURE4.6: SIMPLE CYLINDRICAL DIAGRAM SHOWING DURATION OF COMPUTER USE PER DAY

The above figure no 4.6 shows regarding duration of computer use per day majority of the computer engineering students 36% using computer 7-9 hrs per day while 35.8%, 28.2% using computer 1-3 hrs, 4-6 hrs per day respectively.

FIGURE4.7: SIMPLE CYLINDRICAL DIAGRAM SHOWINGREASON FOR COMPUTER USE

The above figure no 4.7 shows regarding reason computer for use majority of the computer engineering students 56.3% using computer for study purpose while 29.7%, 14% using entertainment purpose, playing purpose respectively.



II nd SECTION OF ASSESSMENT OF PRETEST OF KNOWLEDGE LEVEL REGARDING PREVENTION OF COMPUTER VISION SYNDROM

OBJECTIVE- I-To assess the pre-test level of knowledge regarding prevention of computer vision syndrome among 4th year Computer engineering students.

n=400

Items	Mean ± SD	% of Knowledge
Overall pre-test Knowledge	10.78 ± 2.38	44.9 %

Table 4.2: Pre-Test Overall Knowledge Score on prevention of computer vision syndrom

Table no 4.2 shows the pre-test mean knowledge score on prevention of computer vision syndrom .The pretest mean knowledge score was 10.78 with standard deviation of 2.38.

n=400

Level of Knowledge	f	%
Poor	246	61.5
Average	106	26.5
Good	48	12
Very Good	0	0
Excellent	0	0
Total	400	100%

Table 4.3: Pre-Test Level of Knowledge Score on prevention of computer vision syndrom

Table no 4.3 shows the pre-test level of Knowledge on prevention of computer vision syndrom. In pre-test 61.5 % of 4th year Computer engineering students are having poor knowledge and 26.5 % of them having average knowledge and 12% of them having good knowledge.

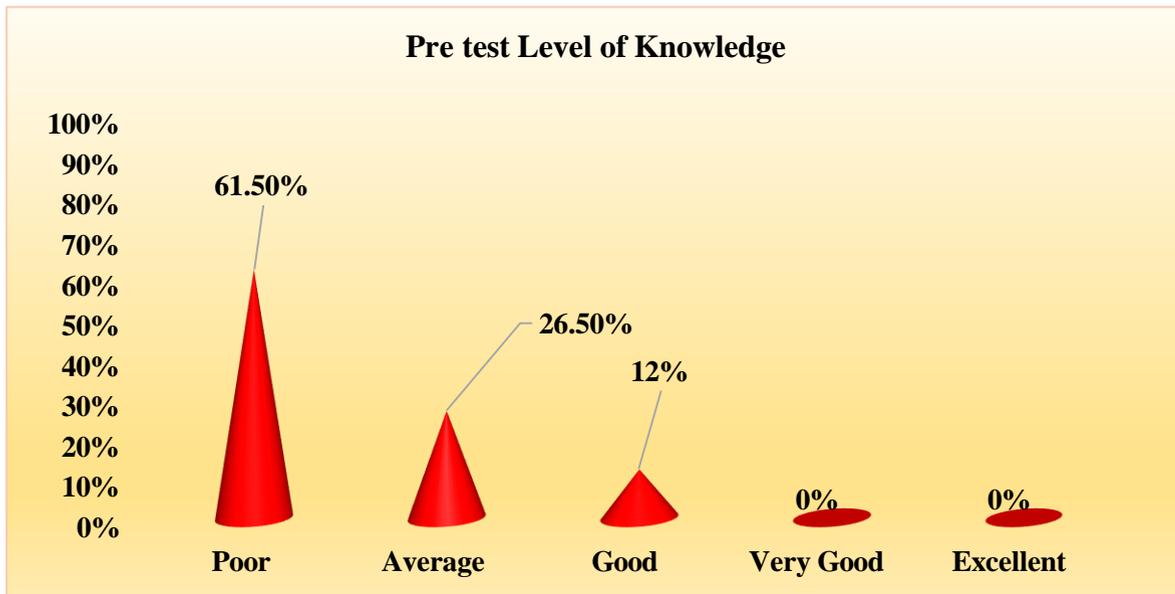


FIGURE 4.8: CONICAL DIAGRAM PRETEST LEVEL OF KNOWLEDGE

SECTION-III

Assessment of posttest level of Knowledge regarding prevention of computer vision syndrome

N=400

Items	Mean ± SD	% of Knowledge
Overall post-test Knowledge	18.26 ± 2.42	76.08 %

Table 4.4: Post Test Overall Knowledge Score onprevention of computer vision syndrome. Table no 4.4 shows the post-test mean knowledge score on prevention of computer vision syndrome.The posttest mean knowledge score was 18.26 with standard deviation of 2.42.

n=400

Level of Knowledge	f	%
Poor	0	0.0
Average	0	0.0
Good	0	0.0
Very Good	132	33.0
Excellent	268	67.0
Total	400	100%

Table 4.5: Post Test Level of KnowledgeonPrevention of computer vision syndrome

Table no 4.5 shows the post-test level of knowledge on prevention of computer vision syndrome. In posttest 67 % of 4th year Computer engineering students are having excellentKnowledge and 33 % of

them having very good knowledge and none of them having poor, average and good knowledge.

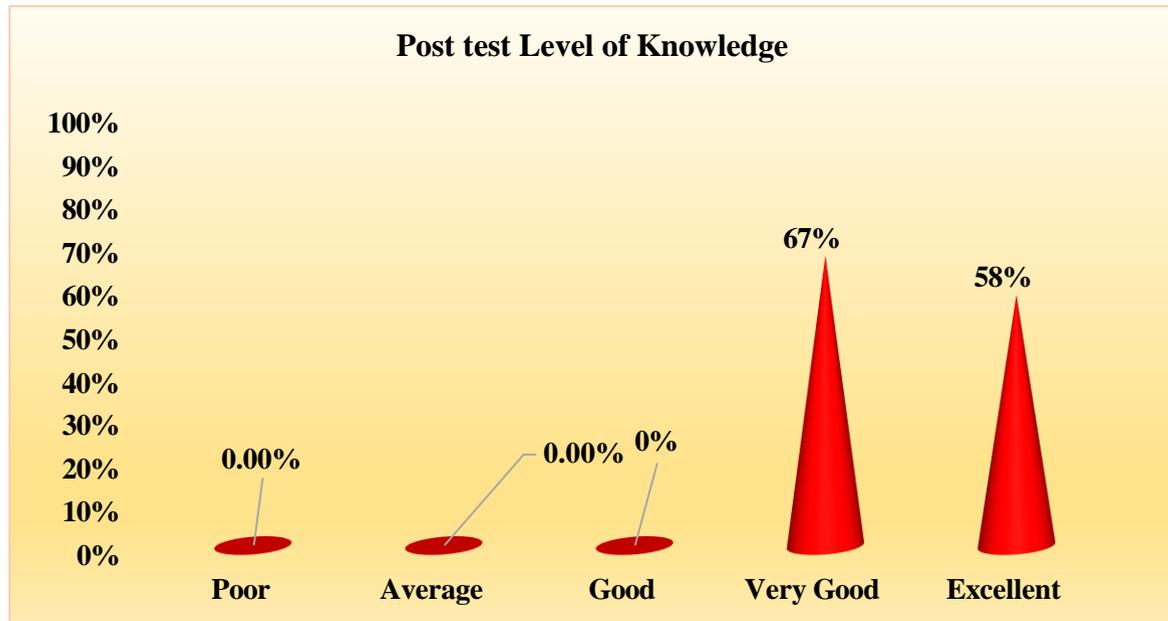


FIGURE 4.9: CONICAL DIAGRAM SHOWING LEVEL OF POST TEST KNOWLEDGE

Teaching Programme

n=400

Items	Pre-test Mean±SD	Post-test Mean±SD	Student paired t-test
Overall Knowledge core	10.78 ± 2.38	18.26 ± 2.42	t=44.07 P=0.000 significant

The above table no 4.6 shows comparison of pre-test and post-test mean knowledge Score on prevention of computer vision syndrome. The difference between pre and post- test knowledge score is 7.48 and the paired t test value 44.07 which was statistically at P= <0.001.

HYPOTHESIS TESTING

H₀₁ :- There will be no significant effect of video assisting program on level of knowledge regarding prevention of computer vision syndrome among 4th year computer engineering students in selected engineering colleges of city.

. Table4.6 reveals that there is a significant difference between the Pre-test and Post-test Knowledge score. Comparison was calculated by student paired ‘t’ test and the value is t=44.07 at p=0.000 level of significance in Knowledge. Therefore, the null hypothesis H₀₁ is rejected.

SECTION V

Association between the selected demographic variable and the pre-test Knowledge regarding prevention of computer vision syndrome

OBJECTIVE- 3 To find out the association of pre-test knowledge scores regarding prevention of computer vision syndrome among 4th year Computer engineering students with selected demographic variables.

n=400

Demographic variables		Poor (246)	Average (106)	Good (48)	Chi-Square Test
Age	21-23	170	76	35	$\chi^2= 0.424$ P=0.809 Df= 2 Not Significant
	24-26	76	30	13	
Gender	Male	152	66	33	$\chi^2= 0.847$ P=0.655 Df= 2 Not Significant
	Female	94	40	15	
Type of family	Nuclear	115	47	25	$\chi^2= 0.796$ P=0.672 Df= 2 Not Significant
	Joint	131	59	23	
Family Monthly Income	Less than 10,000	31	11	2	$\chi^2= 2.505$ P=0.67 Df= 4 Not Significant
	10001-20000	9	7	3	
	20001-30,000	49	36	20	
	30,001 and	157	52	23	

SECTION IV

Comparison of pre and posttest Knowledge regarding prevention of computer vision syndrome

OBJECTIVE 2: To assess effectiveness of video assisted teaching program on knowledge regarding prevention of computer vision syndrome among 4th year Computer engineering students.

TABLE 4.6: Determination of Overall Mean Knowledge Score before and after Video assisted

	above				
Previous academic percentage	50-60%	76	37	21	$\chi^2= 18.505$ P=0.05* Df= 4 Significant
	70-80%	140	57	24	
	Above 90%	30	12	3	
Duration of computer use per day	1 to 3 hrs	93	36	14	$\chi^2= 2.375$ P=0.667 Df= 4 Not Significant
	4 to 6 hrs	65	34	14	
	7 to 9 hrs	88	36	20	
	Study purpose	129	64	32	$\chi^2= 13.567$

Reason for computer use	Entertainment purpose	84	26	9	P=0.016* Df= 4 Significant
	Playing purpose	33	16	7	

Table 4.7: Association between Pre-Test Level of Knowledge and their Demographic Variables

Note: * P.0.05 level of significance .

Table no 4.7 shows the association between socio-demographic variables and the pre-test level of Knowledge. There was significant association between pre-test Knowledge score and selected demographic such as with previous academic percentage ($\chi^2=18.505$, $p=0.05$), reason for computer use ($\chi^2=13.567$, $p=0.016$) and there was no association with demographic such as age, gender, type of family, family monthly income, duration of computer use per day. These types of association are statistically significant, and it was calculated using Pearson chi square test/Yates corrected chi square test.

HYPOTHESIS TESTINGH₀₁:-There will be no significant association between pre-test knowledge score and selected demographic variable on knowledge regarding prevention of computer vision syndrome among 4th year computer engineering students in selected engineering colleges of the city. Table no 4.7 reveals that there is a significant association between the pre-test Knowledge score with the previous academic percentage ($\chi^2=18.505$, $p=0.05$), reason for computer use ($\chi^2=13.567$, $p=0.016$). The association was calculated by Chi square test. Therefore, null hypothesis H₀₁ has been rejected.

SUMMARY: This chapter deals with analysis and interpretation the data and statistical findings of the study. It also covers the discussion of comparison and association of the finding.

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