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Original Research Article

A Study to assess the Effectiveness of Structured Teaching Programme on Knowledge and Attitude on Prevention of Computer Vision Syndrome among Software Professionals Working in Selected IT Companies, Bangalore

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Abstract

The study approach adopted for the study was pre experimental one group pre test and post test research design to assess the effectiveness of structured teaching programme on knowledge and attitude on prevention of computer vision syndrome among software professionals working in selected I t companies, bangalore.The sample size consists of 50 software professionals. Data will be collected by administering the structured knowledge questionnaire and five point liker attitude scales. STP was given to the sample before and after test. Convenient sampling technique was used to select the software professionals. Regarding the effectiveness of structured teaching programme the finding of the study showed that the overall mean percentage of pre and post-test knowledge score was 20%, with t value 27.238 which was highly significant at P< 0.001 level. Mean percentage of pre and post attitude score was 2%, with t value 16.97 which was highly significant at P< 0.001 level. The post-test knowledge and attitude score was significantly higher than the pre-test knowledge and attitude score. Hence it was concluded that the hypothesis (H1) is accepted.

Key words: STP, computer vision syndrome, software professionals, IT companies

Introduction

Computers are everywhere from kitchen to concrete mixers, from planes to pockets. Without computer, world has no global awareness. The computer has become backbone of today's occupational settings. From primitive tools of the Stone Age, today we have entered a new era, the computer age-an age which owes everything to inventors. It has created a brand new environment. They are the heartbeats of the modern world.

Over the past 20 years, there has been a great advancement in the information technology. The use of computer in every workplace has made life easier and increase the output tremendously. Computer has become almost an indispensable piece of equipment both at office and at home. The introduction of computer no doubts has revolutionized and benefited the society; however it does associate with health-related problems. Musculoskeletal related complaints such as tingling and numbness of the fingers, cervical stiffness and backache are well known to be associated with prolonged usage of computer [1]. More recently, visual and ocular problems are reported as the most frequently occurring health problems among computer users [2].

Bangalore is a fast moving and developing city due to many I T intercity and hub intercity status. People of different card use computers work places. The scenario can be seen in almost all office setting with a personal computer been an important tool for many workers in Bangalore today. A rapid increase in the use of advanced technology in the workplace has raised concern for the health and well-being of the computer users. It is known that computer may predispose the users to health problems. Many individuals who work with computers reported high level of job-related complaints and symptoms including ocular discomfort [3].

The computer has become a part of the everyday life at present of people work at different place. Computer Vision Syndrome often results from working on computers for over 8-16 hours. Over

75% of young software professionals and college students in India's IT capital of Bangalore are reportedly facing the vision disorder Computer Vision Syndrome [4]. In the world it has been estimated that nearly 60 million people experience vision problems as a result of computer use. This computer related ocular condition is called Computer Vision Syndrome (CVS). Millions of new cases occur each year [5].

Increased use of computers has led to an increase in the number of patients with ocular complaints with are being grouped together as computer vision syndrome (CVS). This newfound entity, frequently mentioned in the World Wide Web and the lay press, is now being accepted in medical literature[6]., The Occupational Safety and Health Administration department of the US Govt[7]. (OSHA) has defined CVS as a "complex of eye and vision problems that are experienced during the related to computer use; it is a repetitive strain disorder that appears to be growing rapidly, with some studies estimating that 90% of the 70 million U.S workers using computers for more than three hours per day experience CVS in some form"[8].

Computer vision syndrome (CVS) is a temporary condition resulting from focusing the eyes on a computer display for protracted, uninterrupted periods of time. Some symptoms of CVS include headaches, blurred vision, neck pain, fatigue, eye strain, dry, irritated eyes, double vision, polyopia, and difficulty refocusing the eyes. These symptoms can be further aggravated by improper lighting conditions (i.e. bright overhead lighting or glare) or air moving past the eyes (e.g. overhead vents, direct air from a fan) [9].

VDT related vision problems are at least as significant a health concern as the musculoskeletal disorders. Most studies indicate that visual symptoms occur in 50-90% of VDT workers, while a study released by National Institute of Occupational safety and Health (NIOSH) showed that 22% of VDT workers have musculoskeletal disorders. A survey of optometrists indicated that 10 million primary eye care examinations are provided annually in this country primarily because of visual problems at VDTs - not a small public health issue. Vision problems are pervasive among computer workers and are the source of worker discomfort and decreased work performance [10].

The computer technology has its own pros and cons, the majority of these issues are related to health. The increased use of computers in the workplace has brought about the development of a number of health concerns. The complex of eye and vision problems related to near work experienced during computer use has been termed as-Computer Vision Syndrome (CVS).This suggests the need for prevention programmers' to maintain health of software professionals [11].

Objectives of the study

1. To assess the knowledge of I T professionals regarding computer vision syndrome.
2. To assess the attitude of I T professionals regarding computer vision syndrome.
3. To assess the effectiveness of structured teaching programme on knowledge and attitude of I T professionals regarding prevention of computer vision syndrome.
4. To associate the pre test of knowledge and attitude regarding the prevention of computer vision syndrome among software professionals with selected demographic variable.
5. To associate the post test level of knowledge and attitude on prevention of computer vision syndrome among software professionals with selected demographic variable.

Hypothesis

H_1: The post test knowledge and attitude score will be significantly higher than the pre test knowledge and attitude score.

H_2: There will be a significant association between pre test knowledge and attitude of software professionals and selected demographic variables.

H_3. There will be a significant association between post test knowledge and attitude of software professionals and selected demographic variables

Methodology

Research design: Pre-Experimental (one –group) pre-test and post-test design was used for the present study.

Research approach: Descriptive evaluatory approach was used for the present study

Setting of the study: The study was conducted in the selected I T companies in Bangalore

Population: Population for the present study included all software professionals working in selected I T companies, Bangalore.

Sampling: Convenient sampling technique was used to select the sample for the study that fulfilled the sampling criteria for the present study.

Sample size: 50 Software professionals.
50 antenatal mothers

Variables

Dependant variable: Knowledge and attitude of IT professionals regarding computer vision syndrome

Independent variable: In this present study structured Teaching Programme on knowledge and attitude of I T professionals regarding prevention of computer vision syndrome was the independent variable

Demographic variables:- age, gender, religion, education, income per month, year of experience, hours of daily exposure to computer monitor, type of computer used, source of information received regarding computer vision syndrome

Sampling criteria

Inclusive criteria

1. Software professional who were aged between 21-40 years, experiences between 1-15 years.
2. Software professionals who were willing to participate in the study.
3. Software professionals who were on duty during the period of data collection.
4. Both male and female software professionals.

Exclusion criteria

1. Software professionals who already attended the structured teaching programme regarding prevention of computer vision syndrome.
2. Software professionals who were absent during the period of data collection.
3. Non software professionals in the I T companies.

Development and description of tools used in the study

A structured self administered questionnaire was used to assess the knowledge and attitude of IT professionals was structured knowledge questionnaire on prevention on computer vision syndrome developed by the investigator on the basis of objectives of the study.

The structured questionnaire consisted of 2 sections.

Section A: This consists of demographic data including age, gender, religion, education, income per month, year of experience, hours of daily exposure to computer monitor, type of computer used, source of information received regarding computer vision syndrome.

Section B: The knowledge questionnaire consists of 30 items to assess the knowledge of soft ware professionals.

A structured questionnaire on knowledge regarding prevention of computer vision syndrome, which has three sub sections

1. General information, definition and meaning of computer vision syndrome.
2. Causes, symptoms and complications on computer vision syndrome.
3. Prevention and precautions of computer vision syndrome.

All the items were multiple choice questions, which had 4 alternative responses. A score value of 1 was allotted to each correct response and for wrong response zero was awarded.

Section C: To assess the attitude using five point liker scales was developed.

Scoring

This section deals with analysis and interpretation of the data in order to find out the knowledge of software professionals regarding prevention of computer vision syndrome. The knowledge of computer vision syndrome was assessed by 50 items of semi structured questionnaire. Each correct answer was given a score of one.

Data Collection Procedure

Investigator collected the data after getting formal written permission from the selected IT companies (Techcil Technology and Webstorm information Technology), Bangalore. The study was conducted from 06th December 2011 to 13th December 2011 among 50 software professionals selected by non-probability convenient sampling technique. The purpose of the study was explained, self introduction was given by the investigator to the subjects. The investigator assured confidentiality of the reply and the findings. Pre test was conducted by administering knowledge questionnaire followed by attitude rating scale.Structured teaching programme was given to the participants. Evaluation of the structured teaching was done by conducting post-test by using the same knowledge questionnaire and attitude rating scale, 07 days after the implementation of STP.

Data analysis and major findings

Section I: Demographic data

1. Majority of Software professional belonged to 21-25yrs group ie.22 (44%).
2. Majority of software professionals 38 (76%) are male.
3. Majority of the software professionals 24 out of 50 (48%) belonged to Hindu religion.
4. Majority of software professionals 23 (46%) have degree qualification.
5. 15 out of 50 (30%) of them have the income per month between 15,001-25,500
6. Majority of the software professionals 23 (46%) belong to the 7-9 years experience.
7. 38 (76%) of the software professionals are 8-10 hours/day exposure to computer monitor.
8. 16 (32%) of the software professionals desktop computer used, 09 (18%) of the software professionals laptop computer used
9. Majority 19 (38%) of the software professionals received the information regarding computer vision syndrome from their friend.

Section II: Level of pre-test knowledge score.

Based on level of knowledgein the pre-test most of sample 26 (52%) were with poor score.

Section III: Level of pre-test attitude.

Based on level of attitude32 out of 50 subjects majority of the samples 64% had moderate attitude towards prevention of computer vision syndrome, sample 10 (20%) were with positive level of attitude, and few sample 08 (16%) were with negative level of attitude.

Section IV: Effectiveness of structured teaching programme on knowledge and attitude of IT professionals regarding prevention of computer vision syndrome:

Table.1 Aspect wise Mean difference, standard deviation difference, percentage means score, and't'-value of pre test and post test knowledge scores. N=50

Area of the knowledge	Mean difference	SD difference	Mean %	t-value
General information, definition and meaning	0.82	0.77	3.1	7.48
Causes, symptoms and complication	8.04	2.23	9.1	25.48
Prevention and precautions	7.74	2.42	9.1	22.59
Pre test and Post test knowledge difference	16.6	4.31	20	27.24

(DF=49, p=0.05 level significance)

From the above table the P-values obtained were less than 0.05, it was concluded that the structured teaching programme has significantly improved the Knowledge level of IT professionals regarding the prevention of Computer Vision Syndrome at 5% level of significance.

Table 2: Overall Mean difference, standard deviation difference, percentage means score, and't'-value of pre test and post test attitude scores. N=50

Attitude score	Mean difference	SD difference	t-value	Mean %
Pre-attitude and post-attitude difference	30.60	12.74	16.97	2

(df=49, p=0.05 level significance)

From the above table the P-values obtained were less than 0.05, it was concluded that the structured teaching programme has significantly improved the attitude level of IT professionals regarding the prevention of Computer Vision Syndrome at 5% level of significance.

The post-test knowledge and attitude score will be significantly higher than the pre-test knowledge and attitude score. Hence it was concluded that the hypothesis (**H1**) was accepted.

Section V: Association of pre test knowledge and attitude on prevention of computer vision syndrome among software professionals with selected demographic variables.

Association of pre-test level of knowledge with selected demographic variable such as age, gender, religion, education, income per month, year of experience, hours of daily exposure to computer monitor, type of computer used, source of information received regarding computer vision syndrome does not show any significant at 0.05 level. Hence there is no significant association

between the pre-test levels of knowledge with selected demographic variables.

Association of pre-test level of attitude with selected demographic variable such as age, gender, religion, education, income per month, year of experience, hours of daily exposure to computer monitor, type of computer used, source of information received regarding computer vision syndrome does not show any significant at 0.05 level. Hence there is no significant association between the pre-test levels of attitude with selected demographic variables.

Section VI: Association of post-test level knowledge and attitude on prevention of computer vision syndrome among software professionals with selected demographic variable.

Association of post-test level of knowledge with selected demographic variable such as age, gender, religion, education, income per month, year of experience, hours of daily exposure to computer monitor, type of computer used, source of information received regarding computer vision syndrome does not show any significant at 0.05 level. Hence there is no significant association between the post-test levels of knowledge with selected demographic variables.

Association of post-test level of attitude with selected demographic variable such as age, gender, religion, education, income per month, year of experience, hours of daily exposure to computer monitor, type of computer used, source of information received regarding computer vision syndrome does not show any significant at 0.05 level. Hence there is no significant association between the post-test levels of attitude with selected demographic variables.

Recommendations

1. A similar study can be done in larger group
2. A comparative study can be done in different professionals using computer.

Conclusion

The software professionals were satisfied and happy with the information they have received. There was a significant improvement in software professionals' knowledge and attitude in the post test after the administration of the structured teaching programme. Thus the structured teaching programme was effective in improving the knowledge and attitude of the software professionals on prevention of computer vision syndrome.

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