

Occupation Related Health Hazards in Computer Users



Medicine

KEYWORDS:

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ABSTRACT

AIMS: To study & compile the occupational health status of those engaged in computer use. The purpose of this study is to know the potential hazards associated with computer use & to describe how to arrange a workstation to increase comfort & prevent injury.

OBJECTIVE: To find out any serious ailment which could be directly or indirectly attributable to stress in the working situation.

To suggest suitable measures for rectification in the work situation & to suggest measures for the health protection of such employees.

RESULTS: Musculo-skeletal disorders, ocular disorders and psycho-social problems were some of the key health problems observed among computer user in the present study.

Conclusion: Looking at the present study's observations, it is evident that health hazards are a reality in the computer users. These health hazards can be minimised with proper education of the computer users as well as creating better ergonomic work conditions. Such studies can be a help to the employer as well in maintaining health and work output of their employees.

Introduction

Computers have occupied an inseparable position in lives of modern world citizens. The service sector has increased in India multi-fold and which relies heavily on computer based activities. There are large number of population who engage with computer work daily for hours as demand of their service requirements. This leads to development of a number of physical and psychosocial problems for them. It is now proved that the duration of work and computer - related problems are positively correlated. Very few studies were available earlier on health hazards due to occupational use of computers. Common health complaints by computer users are ocular, musculo skeletal and stress related. Repetitive stress injuries (RSI) are also reported in computer users. Not much work is carried out in India on health hazards due to occupational use of computers. Hence, it was thought that a study is needed to find out what are the various health problems observed in a research institute where employees are engaged in computer work for appreciable period of time.

Material and Methods

The cross sectional questionnaire based response study on randomly selected cohort of 150 subjects who were engaged in daily use of computers working in a Clinical Research Organisation in Mumbai was carried from 1st April, 2016 to 20th June, 2016 after obtaining informed consent from the subjects.

The detailed questionnaire was prepared and validated on international standards to assess the existence of health hazards related to vision/eye sore, musculo- skeletal symptoms, RSI and stress and also to collect necessary demographic data. The responses of the enrolled subjects was collected and analysed for the prevalence of health hazards in the selected cohort.

The related questions in the questionnaire are shown in the following tables:

The questions on vision are shown in the following Table-1:

Do you have normal vision?
If not, do you use glasses or contact lenses?
At what age did you start using glasses or contact lenses?
How frequently do you get your eyes checked for glasses/contact lenses?
When your eyes were last examined?

The questions related to vision/eye sore are shown in the following Table-2

Do you suffer from any Eye discomfort after working on PC?
If Yes, is the discomfort every day or is it occasionally?
Was this discomfort felt from beginning or Recent

What is the type of discomfort?(Smarting sensation/Gritty sensation/Itching/Aches/Redness/Tears in excess/Dryness/Discomfort in seeing.
Do you suffer from blurring of vision during or after working on PC?
If yes, how often do you experience blurring of vision? (Quiet often/Occasionally/Rarely)

The questions related to musculo-skeletal symptoms are shown in the following Table-3

Musculo-skeletal symptom	Affected body part	Duration of symptom/s
Numbness		
Tingling		
Burning		
Pain		
Cramping		
Stiffness		

The questions related to musculo-skeletal signs are shown in the following Table-4

Musculo-skeletal sign	Tick, if present
Decreased Range of Motion at hands	
Decreased Range of Motion at wrists	
Decreased grip strength	
Deformity	
Loss of function	

The questions related to RSI are shown in the following Table-5

Have you suffered from any type of repetitive strain injury (RSI) given below:

RSI Level	Description	Tick, if yes
RSI I	Aches & tiredness of the affected limb, but recovers overnight & off duty & no drop in performance	
RSI II	Recurrent symptoms failed to settle overnight, disturbed night sleep & moderate reduction in work performance	
RSI III	Aches, fatigue, weakness at rest, pain with non - repetitive movement & loss of work performance for long time	

The questions related to stress are shown in the following Table-6

Here are some of the ways that stress normally shows up in our lives. Check those that apply to you:

Symptom	Tick if answer is 'YES'
Getting more angry at friends, children or spouse than the situation requires	
No energy to do things after work	

Unable to relax without T.V, drugs or alcohol	
Tension with people around you	
Feeling depressed & powerless	
Greater levels of fatigue	
Headache	
Insomnia	
Muscle tension	
Eye strain	
High Blood pressure	
Ulcer	
Irregular menstrual periods in case of females	
Change of appetite	

Results

Vision: Of the 140 respondents 99 (66%) were without glasses/contact lenses and 51(34%) had either glasses or contact lenses.

Eye discomfort: a total of 74 (54%) respondent experienced some kind of eye discomfort. Of these ocular discomfort subjects, 60% belonged to users of glasses/contact lenses and majority (93%) of these had occasional discomfort. In normal vision subjects, the discomfort was occasionally felt by 87%.

Types of eye discomfort experienced in ascending order is shown in the following table No 7:

Signs/symptoms	No reported	Per cent
Aches, redness	1	1
Aches,Dryness,Discomfort in Seeing	2	3
Gritting,aches,dryness,discomfort	2	3
Aches,tears,Discomfort in seeing	3	4
Aches,redness,dryness	5	7
Discomfort in seeing	5	7
Redness,tears,discomfort in seeing	8	11
Aches ,Redness, Discomfort in Seeing	10	13
Redness	10	13
Redness,tears	12	16
Aches	17	23

Ten subjects reported blurring of vision with other complaints.

The musculo skeletal complaints were observed as shown in the following Table No 8:

Sign/symptom	Nil	Occasional	At work	Daily	Total reported	No of subjects with complaints	Per cent of subjects with complaints
Hand/Wrist pain	93	47	3	1	144	51	35
Shoulder pain	92	40	11	2	145	53	37
Backache	87	47	14	2	150	63	42
Neck pain	64	57	27	0	148	84	57

RSI: Out of the total 54 % had RSI symptoms. 46 % did not have any RSI symptoms. Out of the people who had RSI 91 % had RSI type I & 9 % had RSI type II. None reported RSI III.

Stress: the stress symptoms/signs reported are as per following Table No 9:

No	Stress Symptoms	YES	%
1	No energy to do anything after work	63	42
2	Eye strain	50	33.3
3	Greater level of fatigue	41	27.3
4	Headache	33	22
5	Getting more angry than situation required	27	18
6	Muscle tension	9	6
7	Ulcer	8	5.3
8	Insomnia	7	4.6
9	Change of appetite	7	4.6
10	Feeling depressed & powerless	6	4
11	High blood pressure	6	4
12	Irregular Menses	6	4
13	Unable to relax without TV,drugs,alcohol	4	2.6
14	Tension with people around	2	1.3

Discussion

Musculo-skeletal disorders, ocular disorders and psycho-social problems were some of the key health problems observed among computer user in the present study.

Computer vision syndrome (CVS) is nothing but eye and vision problems arising out of computer use. In the present study the ocular symptoms or vision related problems were found to be on a lower scale of 54%.

Repetitive Strain Injury (RSI) as a condition where characterized by discomfort or persistent pain in muscles, tendons and other soft tissues with or without physical manifestations. This condition arises in persons whose occupation demands repetitive use of wrists and hands. Thus RSI too is a health hazard in computer users. RSI is also known as Work Related Musculoskeletal Disorder (WRMSD), Cumulative Trauma Disorder (CTD), Computer Related Injury (CRI), Work Related Upper Limb Disorder (WRULD), and Occupational Overuse Syndrome (OOS) RSI syndrome is more commonly observed among computer operators than in other computer users.

Work related musculo skeletal disorders are common in computer users.

Neck pain, backache, shoulder pain, hand/wrist pain were observed in the present study in order of 57%, 42%, 37% and 35% respondents.

We found that RSI syndrome was experienced by 54 % of the 150 subjects. Out of the people who had RSI symptoms 91 % had RSI type I & 9 % had RSI type II. None reported RSI III.

Stress was defined as when any three of the following were evident in the responses by the subjects - insomnia, loss of mental concentration, anxiety, absenteeism, depression, substance abuse, extreme anger and frustration, family conflict, headache, and migraine.

In the present study following were the stress related symptoms reported in descending order of frequency- no energy to anything after work (42%), eye strain (34%) and fatigue (27%).

Conclusion: Looking at the present study's observations, it is evident that health hazards are a reality in the computer users. These health hazards can be minimised with proper education of the computer users as well as creating better ergonomic work conditions. Such studies can be a help to the employer as well in maintaining health and work output of their employees.

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