Computer: A Health Evil

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Abstract:

Science and technology revolution has made our lives with so much convenient that people would hardly imagine their lives without computer. Computers are one of the main tools in businesses, educational institutes, offices, homes and even in cars. On one hand, computers have made our lives more easily but on the other hand have created many risks for human health. The adverse risks associated with the usage of these technologies are increasing with their growing demand day by day. In the present study, a total of 175 computer users were chosen randomly from different fields. We have investigated usual complications through questionnaire form. Out of this, 140 were found to have the usual complications like Computer vision syndrome, Carpal tunnel syndrome, musculoskeletal problems, mental stress, Headache and Obesity and remaining 35 respondents were found to have no complaints. Finally, we conclude that the use of computers could either be a boon or bane to humanity which completely depends on the users and the purpose of using. Outdoor activities, physical exercise and minimized usage of computers can be practiced regularly. This might be help to reduce the complications for computer users and office employees.

Keywords: Technology, office Employees, Computer operators, Health complications, IT revolution.

Introduction:

Computers have become an epitome of modern life, being used in every aspect of life which commence from calculating grocery bills, telecommunications, banking operations and for naming any sphere one will be finding gadgets. It has become an integral part of humanity. Usage of Internet technology, the information superhighway can acquire the knowledge of all the information anywhere in the world. It is accessible in a fraction of seconds by just with a click of mouse. India has been one of the forefront placeholders in cyber world with the major service provided by IT industry. (1) Some decades back, before the advent of the computers, the office work involved a wide range of activities, starting from typing, form filing, reading etc., and vision will not get affected because it brings a natural break from each of these activities. In the era of invent of computer, all these activities were done by the users without any change in the posture or vision by the influence of computer. It certainly improved the quality of the work and efficiency, but resulted in ocular problems, such as xerophthalmia, redness, irritation, watering of eyes due to prolonged straining, temporary blurred vision, light sensitivity and muscular problems that arise from using a computer. (2)

The use of computer gadgets has emphatically become an important part of human life ranging from the use of computers for Business purpose, communication and acquiring information, education and entertainment, in-fact computers have become an integral part of humanity, But despite all its importance, computer has posed several negative impacts to humans, this has grabbed the attention among the researchers to do research into the possible effects of computer to the society whether positive or negative.(3) The worldwide trend is to use computers for longer periods every day, due to increased computer based tasks in their works as well as increased computer-based leisure activities. Static posture associated with computer work has been identified as a major occupational risk factor. (4) Hazardous postures, such as wrist extension or radial or ulnar deviation can directly attribute to the use of improper office equipment's and setup. Various ergonomic exposures working with computers can cause musculoskeletal diseases in different parts of the body including shoulders, neck, wrist and back. (5) The increasing use of personal computer at homes has become indigenous part of life. Nowadays the computers are easily accessible even in a middle class family. Not only banks and government offices but also private bodies, autonomous institutions and almost every organization has been computerized for smooth and faster flow of data and information. Computer vision syndrome is one of the most common complaints of people working with monitors. This problem is related with the eyes on vision. (6) This study is conducted for the purpose of evaluating the work environment with computers and computer-associated health problems among the computer users.

Materials and methods:

The present study was conducted in Khaga of Fatehpur district of Uttar Pradesh, India. A purposive sample of 175 computer workers was chosen for the study. Questionnaires were administered personally by our team members and some of these were administered by the computer workers in and around Khaga *Tehsil*, during enrollment period, from April 2017 to June 2017. Informed oral consent had been obtained from each and every participant in volunteer manner after which they were informed about the main purpose of the study. Demographic questionnaire included questions about age, sex, height, weight, date of birth, level of education, profession, occupation, hours of time spent with computers, computer experience, working hours per week with computer, job rotation and the rate of rest were collected according to the Occupational Safety and Health Administration also called OSHA. (7) For this study, we carried-out data collection survey by using questionnaire. Usual complications like, Computer vision syndrome, musculoskeletal problems, mental stress, Carpal tunnel syndrome, Headache and Obesity were included in the questionnaire. The prevalence of those complications were analyzed with the answers given by the computer workers who had the criteria of working on computers daily and continuously more than 5 hours were chosen for the study.

Inclusion criteria: Computer users working more than 5 hours per day continuously were included. 18 to 50 years of Office workers, Computer operators, IT consultant were included in this study.

Exclusion criteria: Computer users working less than 5 hours per day were excluded. Above 50 years or below 18 years and children were excluded from this study.

Results:
The study was done on 175 randomly selected computer adult users for knowing different disorders arising due to long term use of computers. From the total of 175,140 are been affected from various disorders (Carpal Tunnel Syndrome, Computer Vision Syndrome, Musculoskeletal Problems, Mental Stress, Headache, Obesity) and the rest 35 (20%) adults are blessed to deserve with no associated problems.

S.No	Complications	Number Of Computer Users Affected	Percentage %
1	Carpal tunnel syndrome	35	20
2	Computer vision syndrome	29	16.5
3	Musculoskeletal problems	24	14
4	Mental stress	21	12
5	Headache	18	10
6	Obesity	13	7.5
7	No complications	35	20

Table 1: Prevalence and complications of computer users.

These 140 adults are affected to a variety of diseases are due to heat radiation emitted from the laptop which is on use, blue lights arising from the display of the laptop or computers, sedative lifestyle, and the tension arising due to the work to be completed on laptop. It showed that, amongst the 140, Carpal Tunnel Syndrome is at the peak level which is upto 35 adults equivalent to 20%. These 35 adults are affected by it due to increased pressure on the wrist, due to over term, continuous and one way of repeated actions done on the computers. This pressure is showed on the median nerve that causes Carpal Tunnel Syndrome. Computer Vision Syndrome is occurred amongst 29 adults that is 16.5%, due to repeatedly looking at the display of the computer which has an impact on the vision of the eye. After this foremost disorder is Musculoskeletal Disorder caused due to the sedative type of lifestyle that has been adapted due to laptop and 24 adults (14%) are affected by it, these 28 adults have great and extreme pain in the muscles, cartilages, tendons which are related in use of it. Mental stress, due to the unbearable stress faced and insufficient sleep is also an important character observed in almost 21 adults approximately 12%. Headache is due to the adults are in long term contact with the lights emitted by computer, which was around 18 users with 10%. Obesity is present within 13 adults equal to 7.5%. Obesity is due to the sedative life in which lack of elementary day to day common activities and domestic exercises. According to our investigation, sedative lifestyle can be ignored by simple exercises by using the laptop in standing position etc. as shown in *Table 1*. Till now the whole 140 adults are affected and the rest 35 user people are asymptomatic.

As a result all the computer used based disorders have been arising now a days epidemically at a faster rate because of unlimited and discomfort way of using of computers. These defects can been

maintained depending on the characteristic way of using and managing the need of computer usage.

Discussion:
The computer is a powerful tool around the globe in the present Era, which develops our knowledge by learning, communication and Entertainment. Through this technology, we are being shaped in the search of computers and the Internet. The modern computer, a powerful device which enhances the development of social skills in today's adult and even youngsters. Numerous studies identified the association between positive impacts of computer usage and negative outcomes such as increased depression, anxiety, loneliness, and self-admiration. If computer usage can be linked to negative outcomes, then the researchers need to be dedicated more attention towards understanding factors associated with negative outcomes. In the present study, a total of 175 computer users were analyzed, from which 140 were presented with different complication like Carpal tunnel syndrome, Computer vision syndrome, Musculoskeletal problems, Mental stress, Headache and Obesity but remaining 35 respondents had no complications on computer uses. In this study, Majority of the respondents had intense pain in wrist. *Narayana* (1999) stated that there was usual health risks associated with spending too much time in front of computer. Typical problems included eye strain and more dangerous problems such as carpal tunnel syndrome and diseases associated with the scope for psychological malfunctioning also affected on the health perspective of individuals.(8)

Similarly, *Sheady* (1999) reported that 50-90% of computer users experienced the symptoms of computer vision syndrome. Computer vision syndrome is a serious problem associated with computer usage and about three-quarter of computer users were suffering. (9) Several studies have also shown that almost 75 percent of computer users experience visual problems. (10,11) Computer vision syndrome is a collection of symptoms that occurs when working with computers, the most important of which are: eye pain, itching and redness of the eye, dryness in eye, blurred vision, diplopia, headache and other related symptoms such as pain in neck, backache. Eye fatigue includes extensive symptoms such as headache, aversion to proceeding, eye pain etc. (12) *Bergqvist* et. al. in a study that paid in assessment of musculoskeletal disorders in bank computer users concluded that most of the musculoskeletal disorders developed in the region of neck and shoulder, which were consistent with the findings of the present study.(13) In this study, Headache was also another common problem. In which18% of respondents reported muscular fatigue and felt discomfort while working in computers, while 15%percent felt mental stress after their computer work. Another study published in 2002 by researchers of *Dutch TNO Research Institute* (*Blatter and Bongers 3*) found that working with a computer more than 6 hours per day was associated with musculoskeletal symptoms in all body regions.(14)

These findings were parallel to the result of *Hill*, J.O. reported that using the computer, are believed to be an important environmental

factor contributing to the fact that 25% of children in the United States are overweight or obese. (15) The present outcomes provide noteworthy clinical and public health implications. Based on these results, we recommend the computer users to limit their uses based on their purpose, practice domestic or professional exercise and meditation.

Conclusion:

Todays, the usage of computers in working environments has been increased dramatically. The reason for the high prevalence of Carpel tunnel syndrome, Musculoskeletal problems, Mental stress, Headache, Obesity can be related to the repeated activity in each region, high force exertion, long term involvement of works, playing games and seated in same places. The most commonly reported symptoms were elbow pain, arm pain, shoulder pain, neck pain and visual discomfort. Outdoor activities and physical exercise can be practiced regularly which helps in reducing the complications for the future generation of computer users. Moreover minimizing the use of computer will be useful and in treating these complications are possible. This study demonstrated that the use of computers has posed many threats to human health. Finally, we conclude that the use of computers could either impact negatively or positively to humanity based on the users and the purpose of using.

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