ORIGINAL ARTICLE

Prevalence of Computer Vision Syndrome and its risk factors among medical students of Islam Medical & Dental College, Sialkot.

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ABSTRACT:

Aim: To determine the prevalence of computer vision syndrome and associated risk factors among medical students.
Study Design: Descriptive Cross – sectional study.
Place and Duration of Study: Islam Medical College sialkot, Pakistan from 15th febraury, 2019 to 15th april 2019.
Methods: This institution based cross sectional study was carried out on 250 medical students of 4th year and final year of Islam medical and dental college Sialkot, Pakistan. All the students within age group 21-25 years and who had used computers and digital devices were included in the study. Students who were using medication that affect visual health, diagnosed with underlying systemic disease like Diabetes, Hypertension, having preexisting eye diseases and those who do not give inform written consent were excluded from study. Data was analyzed by using the cross tabulation and excel.
Results: mean age of students included in this study was 23 ± 2 in which 148 were females while 102 were males. It was calculated that headache was most common symptom among students almost 80% others were eye strain 48%, body pain 34%, epiphora 13%,back ache 60%,dryness 32%,photophobia 46% and slow refocusing 17%. It was reported that symptoms of computer vision syndrome had direct relation with usage time spent on visual display units.
Conclusion: Computer vision syndrome is a very frequent and becoming more worse among medical students.
Key words: Computer vision syndrome, visual display units, ocular complaints, extra ocular symptoms

INTRODUCTION

Video display Terminals (VDT) are different types of computers which are in use of various departments in modern ages of life like in all offices, colleges, universities as well as homes business points, industries etc.[1]we are advancing towards the time when digital devices will replace the printed material altogether. The time spent on these devices like laptops, desktops and smart phones etc. is increasing[2]

For prolong use of visual display units, an increasing number of people experiencing visual symptoms like eye strain, irritation, dryness, blurring, diplopia and asthenopia which are collectively named as computer vision syndrome[1,3]. It is reported that longer duration of exposure to display screens independently can cause computer vision syndrome which affects the ability of users performance and comfort also.[4]It is studied that computer vision syndrome is developing in users who spend more than six hours per day at computers .[3,5]however a recent study conducted on university students suggested that computer vision syndrome can develop among students even after use of two hours.[6]Symptoms of computer vision syndrome can be prevented by correction of refractive errors like presbyopia and astigmatism ,proper ergonomics of furniture like as level of chair and table, source and direction of lighting system, optimal conditions of room like humidity and temperature and proper position of visual

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display units.[7,8]therefore we conducted a survey among medical students studying in Islam medical college Sialkot to study the associations of various symptoms related to computer vision syndrome and other causes of cvs.

MARTIAL AND METHODS

A Questionnaire Performa was distributed to medical students of 4th and Final Year of Islam medical College Sialkot to study the visual effects of computer on eyes and physical health. The answers of the students were tabulated and analyzed in various categories of visual symptoms, ocular and physical problems (Extra ocular symptoms) the number of student in the study were 250, which includes 102 male and 148 female.

The various visual symptoms like blurring of vision slow refocusing, Diplopia and change of color vision noted. Ocular symptoms of eye irritation, itching and burning sensations, and epiphora, dryness of eye, Eye fatigue and photophobia were noted. Physical (extra ocular) health problems were noticed as Headache Neck and shoulder pain Backache and body fatigue. The duration of work on computers was 1-3 hours and more than 3 hours

RESULTS

Table 1 shows the gender distribution of sample which indicates students participated in study were 250 which included 148 females and 102 males and their mean age was 23.

Table 2 shows the duration of time spent on visual display units which indicates users spend 1-2 hours daily were 16.4%(12 males and 29 females) while 26% spend 2-3 hours per day (25 males and 40 females) and 57.6% spends more than 3 hours per day (63 males and 81 females).

Table 3: The extra-ocular symptoms felt by subjects after using visual display units which included 81.6% subjects felt headache 63.6% feel neck shoulder pain while 66 felt back ache and 54% feel body fatigue

Table 4 illustrates that Visual symptoms were recorded as blurring of vision was present 48% in subjects slow focusing was recorded in16.8% while diplopia and color vision was recorded in 6% and 2.4% respectively.

Table 5 indicates an ocular symptom felt by students in which irritation was present in 36% epiphora was present in 13.2%. Dryness was recorded in 10.8% and eye strain. Eye was found in 26.4%.eye fatigue and photophobia was present in 32.4% and 46.8%.

Table 1: Computer Vision Syndrome

Total Number of Subjects 250	Age: 21-25 years
Male	**Female**
102	148

Table 2: Duration of Working Hours on Computer in 24 Hours

Duration	Male	Female	Total
1-2-Hours	12	29	41
2-3-Hours	25	40	65
More than 3 Hours	63	81	144

Table 3: Extra Ocular Symptoms

Symptoms	Male	Female	Total
Headache	90(36%)	114(45.6%)	204(81.6%)
Neck & shoulder pain	63(25.2%)	96(38.4%)	159(63.6%)
Backache	57(22.8%)	108(43.2%)	165(66%)
Body fatigue	63(25.2%)	72(28.8%)	135(54%)

Table 4: Visual Symptoms

Symptoms	Male	Female	Total
Blurring of Vision	54(21.6%)	66(26.4%)	120(48%)
Slow Refocusing	9(3.6%)	33(13.2%)	42(16.8%)
Diplopia	6(2.4%)	9(3.6%)	15(6%)
Change of Color Vision	3(1.2%)	3(1.2%)	6(2.4%)

Table 5: Ocular Symptoms

Symptoms	Male	Female	Total
Eye Irritation	42(16.8%)	51(20.4%)	93(37.2%)
Itching & Burning Sensation	39(15.6%)	51(20.4%)	90936%)
Watering of Eye	24(9.6%)	9(3.6%)	33(13.2%)
Dryness of Eye (Grittiness)	9(3.6%)	18(7.2%)	27(10.8%)
Sore Eye	3(1.2%)	3(1.2%)	6(2.4%)
Eye Strain	39(15.6%)	27(10.8%)	66(26.4%)
Eye Fatigue	21(8.4%)	60(24%)	81(32.4%)
Photophobia	54(21.6%)	63(25.2%)	117(46.8%)

DISCUSSION

It was found in our study that almost every student who spend more than 3 hours at computers or visual display units were effectives of computer vision syndrome. In Finland Sjogran Rouka et al had studied that 91.85 computer users reported with one or more than one problems after computer usage[9] one study conducted in Chennai had recorded 78.6% medical students are effective of computer vision syndrome.[10] Studies conducted on university students of Malaysia and computer users in Nigeria reported as high prevalence of computer vision syndrome about 89.9% and 74% respectively[11,12].

In our study headache was most frequent symptom was recorded as 81.6% while neck and shoulder pain was recorded as 63.6% which is similar to study conducted by Arora et al on software specialists who also recorded headache as most common symptom almost in 91% subjects[13].

In our study it was found that visual symptoms like blurring of vision was recorded as 48% slow refocusing was found in 16.8%, diplopia was present in 6% and color vision problem was found in 2.4% medical students which are in accordance with a study conducted by Khola Noreen et al on medical students in Karachi, Pakistan.[14] We calculated that usage time of digital gadgets has direct relation with symptoms as we found the students who spend more than three hours had aggravated symptoms of computer vision syndrome which is similar to Study documented by Shrivastava et al that the visual symptoms became worse with increase number of hours spend on computer[15]

A study conducted by rahman and sanip said that high risks of computer vision syndrome is directly associated with number of hours spend on visual display units[16]. Stella et al reported that people who spends more than 6 hours daily had more severe symptoms of computer vision syndrome[17].

In our study we calculated that visual symptoms felt by students were irritation and blurring was found 37.6% and 36% while eye fatigue was 32.4%, photophobia was 46.8%, grittiness was 10.8% and epiphora was found 13.2% which were similar to study conducted in india stated that people who spend more than 6 hours daily at computers had more eye strain and visual symptoms[18].

CONCLUSION

This study reveals that among under graduate student's computer vision syndrome is extremely persistent. It is evident from this study that computer related health problems now becomes an un-ignorable issue. In order to make general public awareness about detrimental defects of computer usage upon health, this is the need of an hour to arrange lectures.

Lectures should be delivered at academic institutes to make young generations aware about risk factors corresponding to usage of computers. University students who use computers for more than two to three hours per day acquired more symptoms of cvs.this is interdisciplinary approach to make effective techniques to seize this problem. Prevented measures should be adopted and implemented by the concerned authorities. Frequent medical examinations and monitoring should be organize to limit complications concerned with computer vision syndrome.

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