SHORT ARTICLE

Computer use pattern among adolescent school students in Chennai

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Abstract

Background: Computer use among adolescents is increased during the recent years. Computer has become important social medium for adolescents. **Aim:** To assess the computer use pattern among adolescent school students in Chennai. **Methods**: This is a cross sectional study done among 1842 adolescent school students studying in secondary and higher secondary schools in Chennai. Data was collected by self-administered questionnaire. **Results**: There were 895 boys and 947 girls included in this study. Nearly 18% of adolescents were using computer for more than 3 hours. Nearly 35% of adolescents were non users of computer. In this study computer use duration was more among boys than girls. Significant difference was observed in pattern of computer use. High proportion of adolescents use computer for academic purpose. **Conclusion**: Greater proportion of adolescents use computer for longer hours which need to be restricted for prevention of long term adverse health consequences.

Key Words

Computer Use; Adolescents; School Students

Introduction

In India, during the recent years, computer has become an important medium in every day social life of adolescents. Computer use may lead to decreased time spent being physically active, which may predispose to excess weight gain. Moreover previous studies have proved the higher prevalence of musculoskeletal discomfort and disorders among adolescents who use computers [1, 2]. Working on a computer for long periods of time can lead to inflammation of tendons, nerve sheaths and ligaments and damage to soft tissues [3]. Some of the cross sectional studies [4, 5] and one longitudinal study [6] have found that internet use was associated with more loneliness and depression for adolescents. However to our knowledge, computer use pattern among Indian adolescents has not been previously described.

Aims & Objectives

To assess the computer use pattern i.e. the rate of computer use, the purpose for which it is used, place where it is used and the gender differences in computer use among adolescent school students of Chennai.

Material and Methods

This is a cross sectional study among students in standards 8-12 conducted in September 2008 to July 2009 in Chennai, Tamil Nadu. Sixty secondary and higher secondary schools in Chennai city were selected randomly and approached for permission to conduct the study. The schools which gave permission were included in the study (N=30).The schools included were 17 private and 13 public schools. The number of students selected from 30 schools was 1896. The number of students selected randomly from each school was 64.

Permission to conduct the study was obtained from the head of the school. In each school, all the sections in VIII- XII Std classes were included in the sampling frame. A sampling frame was prepared by enlisting using attendance registers of all the eligible classes and 64 students were selected by simple random sampling technique using the table of random numbers and the consent forms were handed over to them to be signed by their parents. During the subsequent visit, data was collected from students whose parents have given consent.

Data was collected using self-administered questionnaire. Questionnaire was made in English and Tamil. After explaining the purpose of the survey, questionnaire was given to all students. Each question

was explained while the students recorded their responses directly on the questionnaire with clarification of doubts. Once the students completed the study questionnaire, the omissions were checked and rectified then and there with the students. Computer use was assessed by asking them how many hours did they use computer and the purpose of using computer in a normal day. Students responses were dichotomized into three categories: <1 hour, 1-3 hours and greater than 3 hours/day. The information on place of computer use was also obtained.

Ethical approval for this study was obtained from the Institutional Ethics Committee of Sri Ramachandra University, Porur, Chennai. Data was analyzed using SPSS for Windows Version 15. Pearson Chi-square test was used to find statistical significance.

Results

This study has been carried out among 1842 students studying in VIII to XII standards randomly selected from 30 schools in Chennai city. The students' response was 97.1% based on 1896 sampled students. The non-response was because of refusal to sign the consent forms by the parents. There were 895(48.6%) boys and 947(51.4%) girls included in this study. The students in the age group 12-14 yrs were 760(41.3%) and the remaining 1082(58.7%) were in the age group 15-18 yrs. In this study, 1078(58.5%) students were studying in private schools and 764 (41.5) students were studying in government / government aided /trust managed schools.

Regarding computer use, 11.3% of adolescents were using it for less than one hour, 36.2% for 1-3 hours and 17.8% for more than 3 hours. Remaining 34.7% of adolescents were non users of computer and 24.2% of males and 44.7% of females were non users. In this study, 25.3% of males and 10.7% of females were using computers for more than 3 hours. This sex wise differences in computer use is statistically significant ($p<0.001$). The mean hours of computer use among males was 2.1(SD 2.3) and for females was 1.1(SD 1.7). This mean difference is statistically significant ($p<0.001$).

Nonusers of computer were 39.7% in the age group 12-14 years and 31.2% in the age group 15-18 years. Nearly 19% of adolescents in the age group 12-14 years and 16% in the age group 15-18 years were using computer for more than 3 hours. This age wise differences in computer use is statistically significant ($p<0.001$). In this study, 59.4% of adolescents in VIII and IX standard and 75.3% in X to XII standard were computer users. This difference is statistically significant ($p<0.001$). No significant difference in computer use pattern was observed among students from private schools and students from government / government aided /trust managed schools.

The students use multiple places for computer use such as schools (48.8%), home (29.9%), friend home (10.4%), Internet centres (12.5%), Library (4.8%) and other places (3.4%).

Greater proportions of students use computers for academic purpose followed by playing games and the duration of computer use also more for these purposes. Use of computer for graphics, photos, images, audio, video was also common among adolescents [Table 1]. Significantly greater proportion of males use computer for academic purpose and for playing games than females ($p<0.001$). (Data not shown in table).

Discussion

This study done among 1842 adolescents in Chennai city showed that one third of them do not use computer and nearly two thirds regularly use computers. About 54% of adolescents in this study use computers for more than an hour in a day. A study in Karnataka showed that 35% of adolescents used computer daily for more than 180 minutes. [7] High proportion of adolescents use computer for academic information and some of them are computer group students. But previous studies have proved that computer use is not associated with high academic performance. [8, 9]

Nearly 30% of adolescents in this study use computers at home. Spending time with computers at home, usually is at the expense of other daily activities especially face to face interactions with family members which will weaken the family ties. In this study significantly greater proportion of males use computer for longer duration of hours than females. Excessive use of computer can lead to computer addiction which will interfere with daily life. Computer addiction can affect the relationships, social interaction, mood, personality, thought process and sleep of individuals. [10]

Nearly 50% of adolescents use computers in schools which cannot be restricted as they are part of their curriculum. But remaining use computers at home, friend's house, cyber cafes etc which can be restricted by the parents to prevent computer addictive behaviour among adolescents.

Conclusion and Recommendation

This study reports longer hours of computer use by adolescent school students. The hours need to be restricted to prevent long term health consequences among adolescents.

Authors Contribution

MAR has planned the study, collected and analyzed the data and drafted the manuscript. BWCS has contributed in designing the methodology, writing the research proposal and refining the manuscript.

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Tables

TABLE NO. 1 DURATION OF COMPUTER USE AMONG ADOLESCENTS FOR VARIED PURPOSES

Computer use	<1 hr	1-3 hrs	>3 hrs	Total
Academic information	356(19.3)	338(18.3)	50(2.7)	744(40.4)
Play games	221(12.0)	400(21.7)	22(1.2)	643(34.9)
Graphics, photos, images, audio, video	155(8.4)	183(9.9)	29(1.6)	367(19.9)
News, weather, sports	142(7.7)	145(7.9)	5(0.3)	292(15.9)
e mail and social networks	153(8.3)	116(6.3)	17(0.9)	286(15.5)
Word processing	117(6.4)	78(4.2)	8(0.4)	203(11.0)
Find health information	83(4.5)	86(4.7)	1(0.1)	170(9.2)
Consumer products information	58(3.1)	47(2.6)	4(0.2)	109(5.9)
others	54(2.9)	97(5.3)	5(0.3)	156(8.5)