A STUDY ON PATTERN OF COMPUTER & INTERNET USAGE AMONG MEDICAL STUDENTS

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Abstract

Backround: College students are a unique population occupying a middle ground between childhood and adulthood, between work and leisure, they have been at the forefront of social change. Use of the internet is a part of college students' daily routine, in part because they have grown up with computer. It is integrated into their daily communication habits and has become a technology as ordinary as the telephone or television. Therefore, an information-proficient workface that is computer literate, trained in information management skills and motivated to use the well designed clinical systems would be necessary in tertiary institutions to help students in their learning process. **Objectives:** (1) To find out duration and frequency of internet use among medical students of GSVM Medical college. (2)To explore the pattern of usage in terms of type of work done through internet. (3)To find out the barriers, if any, in using information technology. (4)Based on findings, to give suggestions for enhancing the use of computers and internet in positive direction for medical students. **Materials and methods:** This is Cross-sectional, institution based study carried out in medical students of G.S.V.M.Medical College for duration of 3 months from October 2018 to December 2018.A total of 400 students will be studied.No sampling technique was implicated as all students were included in our study. A pre-designed & pre-tested questionnaire was used. The questions consisted of details regarding bio-social characteristics , duration & amount of internet and computer use, type of work performed on computer and the barriers ,if any in usage of the same. **Results:** Among the pre clinical year students,66.7% of students used internet for academic purpose, 62.5% of students use internet for social networking,about48.2% of students use internet for downloading movies, 31.9% & 58.5% for news, games. Nearly 66.5%of the students use it for banking, shopping, & for online entertainment. Only 19.7% used it for literature search. 19.1% of students use internet less than three hours a week and only 80.9% of students use internet more than three hours a week. Among the para clinical year students, 74.8% of students used internet for academic purpose , 52.7% of students use internet for social networking,about43.3% of students use internet for downloading movies, 27.5% & 54.3% for news, games. students 63.8% of students use internet less than three hours a week and 36.2% of students use internet more than three hours a week.

Keywords: Computer &internet usage, medical students, preclinical years, paraclinical years.

INTRODUCTION

College students are a unique population occupying a middle ground between childhood and adulthood, between work and leisure, they have been at the forefront of social change[1].Use of the internet is a part of college students' daily routine, in part because they have grown up with computer. It is integrated into their daily communication habits and has become a technology as ordinary as the telephone or television[2].Over the last several decades studies have shown that the use of computerized information systems by medical students can improve the quality of care, enhance the use of evidence-based treatment and maintain and update knowledge.One of the major goals of medical education is to encourage students to maintain the knowledge of medical science by becoming life-long learners. Adequate skills in information seeking and regular use of original scientific sources are the key elements in this process. Additionally, it is believed that medical students need training to learn how to use web-based search tools and technologies in order to find high-quality information resources.[3]

In India, medical students are the first-level practitioners of education, patient care and research. Changes in medicine and information technology continue to influence their learning.Internet provides a wealth of information in relation to diseases, therapeutic procedures and pharmaceutical products. It has a lower cost as compared to paper based dissemination of information and also has an added advantage of being available worldwide instantly on demand. Therefore, there is a need not only to equip medical fraternity with adequate skills for use of internet but also to make internet facility available in institutions providing medical education and health care[4] .Although internet has many advantages but it also has some disadvantages. When a keyword is given to a search engine to search information of a specific topic, a large number of related links are displayed. In

this case, it becomes difficult to filter out the required information and to select the correct information. Most of the information on the internet is available in English language. So, some students cannot avail the facility of internet. Some websites contain immoral materials in the form of text, pictures or movies etc. These websites damage the character of new generation.

Therefore, an information-proficient workface that is computer literate, trained in information management skills and motivated to use the well designed clinical systems would be necessary in tertiary institutions to help students in their learning process with the following.

OBJECTIVES:

(1) To find out duration and frequency of internet use among medical students of GSVM Medical college.

(2) To explore the pattern of usage in terms of type of work done through internet.

(3) To find out the barriers, if any, in using information technology.

(4) Based on findings, to give suggestions for enhancing the use of computers and internet in positive direction for medical students.

MATERIAL & METHODS

This is Cross-sectional, institution based study carried out in medical students of G.S.V.M.Medical College for duration of 3 months from October 2018 to December 2018.A total of 400 students will be studied.No sampling technique was implicated as all students were included in our study. A pre-designed & pre-tested questionnaire was used. The questions consisted of details regarding bio-social characteristics , duration & amount of internet and computer use, type of work performed on computer and the barriers ,if any in usage of the same.

Data was collected by going to the respective classes and administering the questionnaires. First they were explained about the objectives of the study and a brief introduction was given about the questionnaire also to remove any sort of ambiguity in the responses. 30 minutes was given to them to fill the questionnaire and return it. Data entry was done in MS Excel spreadsheet. Data was analyzed using SPSS version 16 &relevant statistical tests. P-value less than 0.05 were considered as significant.

RESULTS AND DISCUSSION

Table 1: Biosocial characteristics of the study subjects

Biosocial characteristic	Pre clinical	Para clinical	Total
Age (yrs)			
17-19	114(77.5%)	32(24.4%)	146
20-22	32(22.5%)	96(75.6%)	128
Sex			

Males	69(46.9%)	81(63.7%)	150
Females	78(53.1%)	46(36.3%)	124
Religion			
Hindus	139(94.5%)	115(90.5%)	254
Muslims	4(2.7%)	8(6.2%)	12
Sikhs	4(3.8%)	4(3.3%)	8

In the preclinical years about 77.5% of students are of age 17-19yrs and 22.5% of students are of age 20-22 yrs of age. About 46.9%of students are males whereas 53.1% of students are females. About 94.5% of students are Hindus, 2.7% of students are Muslims and about 3.8%% are Sikhs.

In the Para clinical years 24.4%% of students are 17-19 yrs of age while about 75.6%% of students are of 20-22 yrs of age. About 63.7%%of students are males whereas about 36.3%% of students are females. About 90.5% are Hindus, 6.2% are Muslims and3.3% Sikhs.

Table no. 2: Pattern of utilization of internet among the students of different batches

Utilization pattern	**Pre clinical**	**Para clinical**
Social Networking	92(62.5%)	67(52.7%)
News	47(31.9%)	35(27.5%)
Information	86(58.5%)	69(54.3%)
downloading movies, games & software	71(48.2%)	55(43.3%)
banking, shopping, booking tickets	47(31.9%)	30(23.6%)
online entertainment	51(34.6%)	15(11.8%)
Academics(Medical procedures,seminars,learningtutorials)	98(66.7%)	95(74.8%)
literature search for researches	29(19.7%)	30(23.6%)

Among the pre clinical year students,66.7% of students used internet for academic purpose (searching videos, pictures of medical procedures), 62.5% of students use internet for social networking,about48.2% of students use internet for downloading movies, 31.9% & 58.5%for news, games & other infrmations. Nearly 66.5%of the students use it for banking, shopping, & for online entertainment. Only 19.7% used it for literature search.

Among the para clinical year students,74.8% of students used internet for academic purpose (searching videos, pictures of medical procedures), 52.7% of students use internet for social networking,about43.3% of students use internet for downloading movies, 27.5% & 54.3%for news, games & other informations. Nearly 35.4%of the students use it for banking, shopping, &

for online entertainment. Only 23.6% used it for literature search

Table 3: Association of the year of course and sex with the duration of internet use per week

Variables	**Duration of internet use**		
Year of course	**<3hrs/week**	**≥3hrs/week**	**p-value**
Pre clinical	28(19.1%)	119(80.9%)	p<0.0001*
Para clinical	81(63.8%)	46(36.2%)	
Sex			
Males	102(69.3%)	45(30.7%)	p<0.01*
Females	109(85.8%)	18(14.2%)	

*Statistically significant

Among the pre clinical year students 19.1% of students use internet less than three hours a week and only 80.9% of students use internet more than three hours a week.

Among para clinical year students 63.8% of students use internet less than three hours a week and 36.2% of students use internet more than three hours a week.

Among total males & females students, 85.8% of females use internet less than three hours a week while 69.3% males use internet less than three hours a week.

About 30.7% of male students use internet more than three hours a week and about 14.2% of female students use internet more than three hours a week.

Table no. 4 Association of difference in the mean knowledge score regarding internet and computer use with the year of course and sex of the study subjects

Year of course	**Knowledge about internet**	**p value**
	Mean ± Standard deviation	
Pre clinical	7.23 ± 1.173	
Para clinical	6.67 ± 2.177	<0.0001*
Sex-		
Males-	6.36 ± 1.959	0.748
Females-	6.42 ± 1.985	

*Significant difference

The mean knowledge score was highest among the pre clinical year students i.e. 7.23 as compared to their para clinical seniors. This difference was found to be statistically significant. The difference in mean knowledge score was not found to be significant between male and female students.

Table no. 5 : Barriers to using internet among the different batches

Barriers	**Pre clinical**	**Para clinical**
lack of time	77(52.3%)	71(55.9%)
lack of skills	15(10.2%)	31(24.4%)
lack of availability	50(34.0%)	36(28.3%)
internet using is not relevant	5(3.4%)	6(4.7%)
high cost	7(4.7%)	8(6.2%)
slow speed	28(19.04%)	26(20.4%)

Maximum number ofstudents from preclinical & paraclinical batches i.e. about 52.3% & 55.9% find lack of time as the barrier to using internet. About 34% &28.3% of pre clinical & para clinical students find lack of availability as the barrier of using internet. Whereas about 10.2% & 24.4%of pre clinical &Para clinical students find lack of skills as the barrier to using internet. Only 3.4 % & 4.7% of pre clinical & paraclinical students find internet using is not relevant. Whereas 5-7% of students of rest of the batches find internet using as totally useless

DISCUSSION

From the study done, the conclusions that could be drawn are as follows:

The most preferred use of internet was communication by the study subjects. But it was also found that online entertainment was one of the major uses for the junior most batch. Referring the internet for searching medical literature was low among all the batches.The knowledge of computers and internet was more among the junior batches and this difference in knowledge was found to be statistically significant.The proportion of students using internet for more than 3 hours per week was more among the first and fourth year students as compared to the second and third year students. Also proportion of males using internet for more than 3 hours per week was more as compared to females. These differences were also found to be statistically significant. Shortage of time and lack of easy availability has been the main barriers for the students not being able to access the internet.The findings refer towards both aspects i.e. good and bad of internet and computer use. This is a healthy trend that the younger generation is much abreast with the knowledge of information technology. But it is also unfortunate that using this knowledge for just communication and entertainment will drain away their valuable time and energy. It is therefore suggested that measures be drawn for empowering the medical students with the correct information regarding the use of internet and computers. This will help the students to build their future as doctors having more competence and greater confidence.

Ibrahim S Bello et.al.have reported about the knowledge and utilization of information technology among health care professionals and students in lle-ife, Nigeria. They found that 54% of respondents had received some form of computer training, 26% had a computer, 18.9% demonstrated a good knowledge of computer while 58.8% had average knowledge and 22.3% showed poor knowledge, 39.9% demonstrated a good attitude and utilization habits while 33.8% had average attitude and

utilization habits and 26.4% showed poor attitude and utilization habits.**A.M. Ahmed et.al.**have reported about the use of the internet by Sudanese doctors and medical students. Their study showed that 84.3% of doctors and 78.9% of students had used the internet, 55% of consultants and 18.2% of junior doctors used the internet daily, 60% of consultants and 53.1% of junior doctors had poor ability of using internet, 33.3% of students used the internet only for personal and not for academic purposes. Barriers to greater use of internet by doctors included: 80.2% had time constraints, 54.6% had poor skills, 53.4% had no access to full text of journal articles, and 47.6% had difficulty in verifying the quality of information, 41.8% due to high cost. Students faced similar barriers but also listed poor knowledge of the English language.**S. Uribe et.al.** have reported about the use of internet and information technology by dental students in Chile. They found that 96.4% of students used the internet, 73.4% students had home internet connections, 92.2% students used e-mail and 88.3% used search engines, 21.1% used the internet to search for dental information for their studies, 70.4% students used internet easily, 56.2% indicated that any search for information was very easy and 72.2% indicated that the use of virtual education would not affect their class attendance.**Grace Ada Ajuwon et.al.** have reported about the computer and internet use by first year clinical and nursing students in a Nigerian teaching hospital. Their study showed that 42.6% students could use the computer, 58% of the medical students are computer literate and 75.9% of the student nurses are not, 60.7% of the entire students had ever used the internet and 76.4% students had used e-mail.**Patricia M. Odell et.al.** have reported about the internet use among female and male students. They found that number of internet users increased rapidly. In 1995 only 9% of the U.S. adult population was online but in 1999 56% of all adult population was online. Recent estimations reveal that 40-50% of all internet users are women.**Nancy Hrinya et.al.** have reported about the use of web-based library resources by medical students in community and ambulatory settings. Their study showed that 69% of students assessed the website on a daily or weekly basis and more than 80% thought the website was a valuable addition to their clerkship.**Asefeh Asemi et.al.** have reported about the awareness and use of digital resources in the libraries of Isfahan. It has been found that 70% of students were aware of digital resources but 69% of them had used them and 62% were aware of offline databases, 72% of students were aware of online databases, accessible via the central library website and about 53% of respondents had used them, 87% of students felt that the available data resource met their information needs.**Purinam Devl et.al.**have reported about the internet users- a study of Manipur University library. Their study showed that academic related website were the most visited website and sports related website was the least.52% of respondents think that internet was useful to them, 39.02% of respondents were facing difficulty due to slow internet speed, 28.05% due to limited number of computers and 22.4% due to increased frequency of internet disconnection, 90% were making maximum use of internet facility for their information requirements.**Rashmi Sharma et.al.**have reported about the trend of internet use among medical students in Government Medical College. It has been found that 88% of PG students and 65% of UG students were reported to use computers, 55% of UG students were using computers on their own and they were using computers for entertainment and information, 24% of PG students were using computer assisted teaching(CAT).**Dr. Rajiv Arora et.al.** have reported about the computer and information technology skills of 1st year medical and dental students at CMC, Ludhiana. Their study shows that about 94 % of the students could asses and use the computer. E-mail was the most popular of the internet services used by the students.**Unnikrishnan et.al.** have reported about the pattern of computer and internet use among medical students in coastal south India. They found that 69.5% of students used the internet for their entertainment. 40%PG use it for general information.77% PG were satisfied with computer assisted teaching. 50.5% of 1st and 2nd year students use internet to communicate socially. 21% pre-final & final year students use internet for their class work. **P.Lal et.al.** have reported about the internet & internet use among medical students and residents of a medical college of north India. Their study showed that 85.1% of PGs & SRs and 81.6% of UGs used internet for personal & professional purposes.90.6% were aware of the presence of the internet café in the campus. Use of internet café by PGs or SRs were significantly higher i.e. 66.4% as compared to UGs. 56.6% of UGs & 78.6%of PGs or SRs used internet either at home or facilities other than the internet café in the campus.50.8% students were dissatisfied with the internet facilities.80.2% of respondents facing difficulties due to slow speed, 24% due to increased frequency of disconnection,14%due to inadequate number of computers,12.5% due to inadequate software contents,11.5% due to closure of the facilities and also due to greater use of internet at home i.e. 62.4%.

REFERENCES

1. Sharma.R.Verma, U.Sawhney, U.Arora, S.and Kapoor, V.(2006)Trend of internet use among medical students,JK Science,Vol.8No.2
2. Mony,P.K., George,K.C. and Chacko,N.(2004)Computer use among students of a medical college in Southern India, National medical journal of India, May-June; 17(3), pp.175-176
3. Arora,R.(2003)computer and information technology skills of first year medical students, Health BAdministrator,17(1),pp.54-58B
4. Asgari-Jirhanden N, Haywood J. Computer awareness among medical students: A survey. Med edu 1997;31:225-9
5. Towle. Changes in health care and continuing medical education for the 21st century. BMJ 1998: 316: 301-4
6. Kuss DJ, Griffiths MD. Online social networking and addiction — A review of the psychological literature. Int J Environ Res Public Health 2011;8:3528-52.
7. Christakis DA. Internet addiction: A 21st century epidemic? BMC Med 2010;8:61.
8. Internet and Mobile Association of India. Internet Users in India Crosses 200 Million Mark. New Delhi: Internet and Mobile Association of India (IMAI); 2013.
9. Daniel T, Shek L, Rachel C, Sun F, Lu YU. Neuroscience in the 21st Century from Basic to Clinical. 2nd ed. New York: Springer Science+Business

Media LLC; 2013.
10. Pfaff DW. Neuroscience in the 21st Century: From Basic to Clinical. New York: Springer; 2013.
11. Kandell JJ. Internet addiction on campus: The vulnerability of college student. Cyberpsychol Behav 1998;1:11-7.
12. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 5th ed. Arlington, VA: American Psychiatric Publishing; 2013. p. 796.