

Original Article

Attitude and Analysis of Using Computers by the Medical Students in Karachi

1. Shaheen Akbar Agha 2. Iqra Ali 3. Muhammad Akbar Agha

1. Asstt. Prof. of Community medicine, Sindh Medical College, DUHS. Karachi 2. House Officer, JPMC, Karachi
3. Asstt. Prof. of Hematology, DIMC, DUHS. Karachi

ABSTRACT

Background: Computers provide the wealth of information and the means of communication, education and patient management. Although several studies in different countries have explored the extent to which health science students use the computer and the internet, a few researches are available on this subject in Pakistan, where the Internet culture is cultivating rapidly. Hence this study was conducted to assess the knowledge, skills, proficiency of using computers and browsing internet by the medical students and their implement of this knowledge in the medical field for the purpose of study and research.

Objectives: To assess the frequency and purposes of computer and subsequent internet usage among medical students.

Study Design: A Descriptive cross-sectional study.

Place and Duration of Study: This study was conducted during 1st.September – 1st.November 2008 amongst the Medical Students enrolled in public and private Medical Colleges of Karachi.

Materials and Methods: The sample size was 450. A well designed structured questionnaire was used to collect responses in a voluntarily and confidential manner.

Result: 91% medical students were computer literate. The main reason for lack of computer knowledge was lack of time and lack of access to a computer. 88% agreed that computer has revolutionized and better off the world. 93.3% use internet for research, chatting, health information and medical news, emails, music and entertainment. 86.3% students use Google as the main search engine. 83.7% have used internet for the research purpose. 77% use internet for latest medical news. 68.5% students use it for the diagnosis, prognosis and treatment of diseases. Only 17% are the members of Medical Journals.

Conclusion: The medical students using computers have a positive attitude towards its use in the medical field, which not only has made a significant impact but also encourages them in study, research and keep them updated in this fast developing world. Use of computers enhances decision-making, management planning and medical research among the students.

Key words: Medical students, Karachi, computer, medical education. Internet users.

INTRODUCTION

In our fast developing world, the emerging need of computer knowledge has made an impact in every field, including the medical world. There is rampant use of computer technology in patient management, therapeutics, pharmaceutical products, education, conference and many other tenets of the health-care industry. 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 demand¹. This makes it almost mandatory for the healthcare professionals to be well versed with this technology.

The internet, one of the important scientific developments of today, provides vast information in relation to diseases, therapeutic procedures and pharmaceutical products just within few clicks of mouse. Therefore, there is a need not only to equip medical fraternity with adequate skills in ICT but also to make internet facility available in institutions providing medical education and health care.²

In the last decade, advances in computer technology have occurred at a very rapid pace. These developments have impacted greatly on developments in medicine. A large amount of medical literature and information is now available electronically and even medical teaching is becoming electronically based in some developed countries. In resource poor settings, however, computer technology may not be widely utilized by medical students^{3,4} because only limited courses for basic computer skills are taught to them. Students acquire their competence from sources outside the university. Therefore, ascertaining the opinions of students is necessary to correct deficiencies and address negative attitudes⁵.

MATERIALS AND METHOD

This population- based cross-sectional study was carried out using disproportionate stratified sampling technique. The study was conducted in various medical colleges of Karachi including Dow medical college, Sindh medical college, Ziauddin Medical University &

Baqai Medical University. Only MBBS undergraduate students were covered in it. An initial validation survey was conducted on 25 medical students to test the questionnaires and the required changes were inducted in the questionnaire. The questionnaire was bereft of any technical details and was designed to be simple and easy to understand. The respondents were given a choice of answers and were only expected to mark the answers with a tick. The language used in the questionnaire was English and it was consist of 22 questions. Information was collected regarding age, sex, use of computer and internet service and basic knowledge of computer skills and programming. 450 forms were distributed among students with their verbal consent, out of which 416 forms were filled and given back in hand. Data was fed in SPSS version 10 and analysis was carried out using frequency chart and, pie chart and graph.

RESULTS

Total 450 forms were distributed among the students of Sindh Medical College, Dow Medical College, Baqai Medical College and Ziauddin Medical University. The (Figure 01) shows the graph of the students from each university. The response rate was 93%. Majority of the students were females (65%). Demographic data shows the mean age to be 22.5 years, ranging from 17 to 25 years. 91% students were computer literate. The rest 9% excused of having lack of time and interest or to have no access to use it. 68% students have access to computers at home while rest have been using it at library (26%), at acquaintances's place (5%) and only 1% go to internet café. 50% medical students felt that working with computer gave them a lot of self-confidence. 88% agreed that computer has revolutionized and better off the world. 51% medical students felt that they would prefer spending evening with family and friends rather than working on computer. 94% students think computers are valuable and necessary for present era. 52% Students enjoy working on computer and believe that it has built lots of self-confidence in them. 70.7% students use computer whenever needed, while 12.3% students use it many times a day and 17% have used it hardly ever. The proficiency of using basic computer programmes has been evaluated in (Table No.01)

The use of internet among medical students is 93.3%. (Figure 02) indicates the main purposes of using internet. The most popular search engines among medical students are found to be Google (86.3%), followed by Yahoo (31.5%), Msn (30.3%), Wikipedia (20%), Others (5.8%). 83.7% have used internet for the research purpose. 77% use internet for latest medical news. 68.5% students use it for the diagnosis, prognosis and treatment of diseases. Around 58% students

sometime in life have downloaded free medical books on internet.

Table No.1: Basic computer knowledge of medical students

Basic Computer Programs	Good (%)	Poor (%)	Average (%)
Keyboard Skills	56.3	7.0	36.8
MS Office	35.8	25.2	38.9
Power Point	43.8	22.1	34.1
Operating System	29.8	22.4	47.8
Setting database & management data	17.8	43.3	38.9
Online searching & downloading information	67.8	10.3	21.9
Installing software on computers	41.8	28.8	29.3
Troubleshooting problems	19	41.6	39.4

Figure No.1: The % of the Medical Students Participated in the Survey

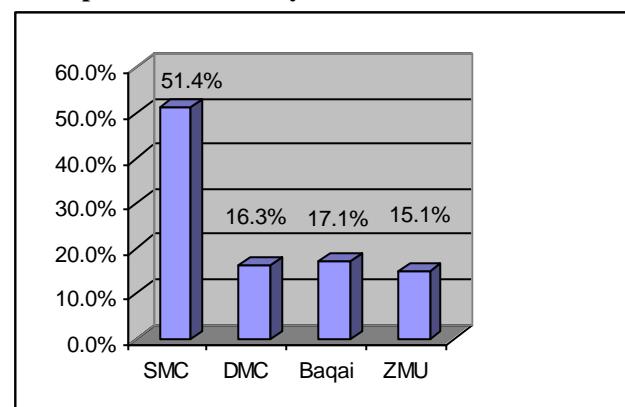
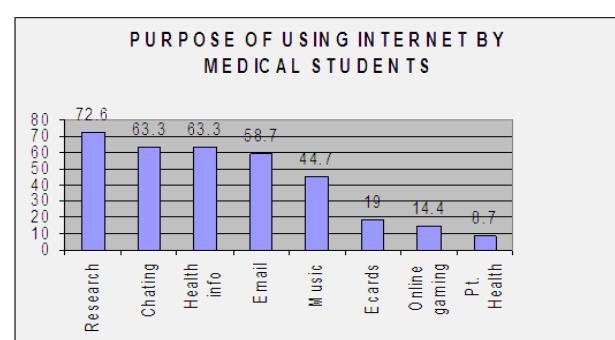


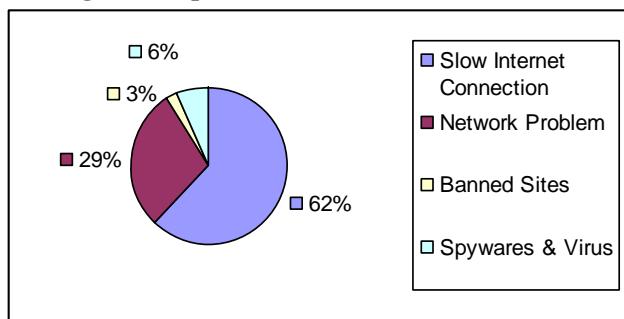
Figure No.2: Purpose of Using Internet By Medical Students in percentage



The major problems faced by the students while working on the internet is illustrated in (Figure 03). The percentage of the medical students who have done courses in computers is 24%. Others learned computer

by self-learning or using manuals. Only 17% students are member of Medical journals.

Figure No.3: The Problems Faced by Students while working on Computer



DISCUSSION

The aim of this study was to investigate the current knowledge, skills, and opinions of undergraduate medical students regarding use of computer and internet in a technology-savvy city, like Karachi, in Pakistan. 91% of the entire sample in this study was computer literate, and have fair competency in downloading, e-mail, browsing internet. Majority (93%) uses Internet regularly. A similar survey was conducted in 2007 in Army Medical College, Rawalpindi where 89% computer literacy rate was indicated⁶ and in another survey of final year medical students of Allama Iqbal Medical College, Lahore where the computer literacy rate was 19%⁷. This figure is quite better than the findings from similar studies in Malaysia, where 67% of Medical students surveyed reported adequate skills in browsing the Internet⁸. Similarly, in Lagos, Nigeria, the computer and Internet were used by 61% of medical students⁹ and 83% medical students in the UK¹⁰. Research and E-mail was the most popular of the Internet services (73% & 59% respectively) used by the students. This is comparable to previous studies where e-mail use was high (78%) among medical students in Malaysia¹¹. 68% of students in our sample have computer at home. This figure is pretty close with the 71.7% of first year medical students that do have access to a computer at home in Aarhus, Denmark³, 73% of medical students in Hadhramout, Yemen¹² and 86% in California, USA¹³.

Despite the fact the computer is being used widely among medical students in Karachi, their proficiency in Keyboard skills, using MS Office and Power Point, Operating system, Troubleshooting and Setting database is inadequate at national level which explains training to the medical students can enhance their skills making its use mandatory not just in their professional life but for general purposes also. From the survey it was found that 94% of students agreed that computers

are need of today's world and 52% of them said, they enjoyed working with computers.

The attitude is defined as a learned, global evaluation of an object (person, place or issue) that influences thought and action¹⁴. The earliest research that examined attitudes toward computers was conducted by Lee in 1970. He identified two dimensions of attitude: (1) the beliefs in the computer as a beneficial tool and (2) beliefs that the computers are autonomous entities¹⁵. In our survey, it is remarkable the medical students posses a positive attitude towards computers and internet technology. This attitude acts as facilitator in the learning process and inculcation of ICT in not just medicine but all fields of science, arts and commerce. Hence if computer-assisted technology is introduced into traditional teaching methodologies it would greatly enhance the understanding of several concepts in anatomy, pathophysiology, biochemistry and pharmacology. It would also help the doctors to develop indigenous interactive computer programmes for the caring, the diagnosis and the management of the patients¹⁶. More surveys need to be carried out in other big and smaller cities to look at the overall computer scenario in Pakistan. Furthermore computers should be a part of curriculum of medical universities, and access to computer library catalogue should be available.

CONCLUSION

The medical students using computers have a positive attitude towards its use in the medical field, which not only has made a significant impact but also encourages them in study, research and keep them updated in this fast developing world. Use of computers enhances decision-making, management planning and medical research among the student.

Acknowledgement

We acknowledge the efforts made by DR. Mehreen Iqbal Batch 2010, for data collection and analysis during September- December 2008, while posted in the Department of Community medicine Sindh Medical College, Dow University of Health Sciences Karachi.

REFERENCES

1. Lal P, Malhotra R, Ahuja C, Ingle GK. Internet use among medical students and residents of a medical college of North India. Ind Journal C Med 2006;31(4):293-94
2. Towle A. Changes in health care and continuing medical education for the 21st century. BMJ 1998 24;316(7127):301-4.
3. Dorup J. Experience and attitudes towards information technology among first-year medical students in Denmark: longitudinal questionnaire survey. J Med Internet Res 2004;6(1):e10.

4. Kerfoot BP, Masser BA, Hafler JP. Influence of new educational technology on problem-based learning at Harvard Medical School. *Med Educ.* 2005;39(4):380-7.
5. Lang, WP. Trends in students' knowledge, opinions and experience regarding dental informatics and computer applications. *J Am Med Inform Assoc* 1995;2:374-82.
6. Ullah M, Khan MN. Attitude towards information and communications technology among undergraduate students in Army Medical College: A survey. *Pak Armed Forces Med J ISSN 0030-9648*; 2007;57(3):201-205
7. Haroon M, Imam F, Haroon R. Computer education: attitude and opinion of final-year medical students. *Biomedica*. 2000;16:40-3.
8. Nurjahan MI, Lim TA, Yeong SW, Foong AL, Ware J. Utilization of information technology in medical education: a questionnaire survey of students in a Malaysian institution. *Med J Malaysia* 2002;57:58-66.
9. Odusanya OO, Bamgbala O. Computing and information technology skills of final year medical and dental students at the College of Medicine , University of Lagos, Nigeria . *Niger Post grad Med J* 2002;9(4):189-193.
10. Walmsley AD, White DA, Eynon R, Somerfield L. The use of the Internet within a dental school. *Eur J Dent Edu* 2003;7 (1):27-33.
11. Johns Hopkins Bloomberg School of Public Health Students handbook. Johns Hopkins Press; 2002-2003
12. Bin Ghouth AS. Using Computer and Internet for Medical Literature Searching Among Medical Students in Hadramout University, Yemen. *Online J Health Allied Scs.* 2008;7(1):6
13. Jerant AF, Lloyd AJ. Applied medical informatics and computing skills of students, residents, and faculty. *Fam Med.* 2000;32:267-272
14. Perloff, RM. The Dynamics of Persuasion: communication and attitudes in the twenty-first century. 4th ed. Newyork, Oxon:Routledge; 2010. p.40-45
15. Lee, R. Social attitudes and the computer revolution. *Public Opinion Quarterly* 2007;34(1) 53-59
16. Bubgiba AM, Noran MH. IT usage, perceptions and literacy of medical students. *Asia Pac J Public Health* 2003;15(2):127-34

Address for Corresponding Author:

Dr. Shaheen Akbar Agha
202-B AMBER TOWERS
Plot # 22-A
Main Sharahe Faisal
Block-6, PECHS. Karachi-- 75400
E.Mail. dr_s_agha@yahoo.com
Contact: 0333-2112930, 0333-2215280