

A Study of Usage of Internet among the Students and Faculty of Dental Sciences in Chitradurga and Davanagere Districts, Karnataka

B. Manjunatha¹ and B. T. Sampath Kumar²

¹Librarian, Government Science College, Chitradurga, Karnataka, India

²Professor, Department of Studies and Research in Library and Information Science, Tumkur University, Tumkur, Karnataka, India

E-Mail: manjunathshanbhog@gmail.com, sampathbt_2001@gmail.com

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Abstract - The present paper focuses on the use of Internet, experience in the use of Internet and use of various Internet applications by students and faculty members of Dental Sciences. The study found that majority (98.69%) of the respondents used Internet. The Internet is mainly used for e-mail (60.26%), teaching (43.02%), to know the trends in subject and also for doing research. Majority of respondents (59.6%) felt that Internet is more useful. 31.12% of respondents learnt the Internet with the help of friends/colleagues followed by trial and error (23.84%).

Keywords: Internet, Students, Faculty and Dental Science

I. INTRODUCTION

The Internet is a user-friendly communication medium that is cost effective and fast. The required information can be accessed from anywhere with an Internet connection and with no time limitation. The information on the Internet is usually up-to-date, which makes it a useful tool to follow recent developments. Internet sites containing clinical, histo-pathological and radiographic data create an environment for students to study at their own pace. The Internet provides means of accessing the expertise of specialist clinicians and academicians of all over the world. Students can have the opportunity to learn about different views on controversial topics, review extensive case reports, and gain knowledge of rare diseases. In addition, to serve as a learning tool, the Internet may motivate students to undertake research and help them develop skills in collecting and analyzing data. Discussion groups via electronic mailing or chat rooms, videoconferencing, interactive learning environment by animation, and simulation methods are further advantages of the Internet. Another important advantage of the Internet is that students in developing countries can have the opportunity to access a large pool of data, which could help reduce the information gap resulting from the disadvantages of the education opportunities in these countries. (Ayatollahi, 2010)

Keeping in view the importance of Internet in dental sciences the present study has been undertaken to investigate the extent to which students and faculty members use Internet in Dental Colleges of Chitradurga and Davanagere districts in Karnataka state.

II. REVIEW OF LITERATURE

In recent past few research studies have been carried out to examine the computer literacy, use of Internet and skills of different social groups such as academics, faculty members, professionals and students. However, this review focuses primarily on the studies related to students and faculty members of Dental Colleges.

In the year 2006 Mir conducted a study on the use of computer and Internet use by Canadian dentists. The study found that 90% of the respondents had a computer in their primary practice. Computers were used mainly for administrative tasks (accounting, book keeping and scheduling) rather than clinical tasks.

In case of Butali (2011) study all the respondents have access to the computers, 2.5% within the university and 31% at home and Internet cafes. About 50% of them used the Internet for their studies. The findings of the study showed that dental students and resident doctors in training have the requisite knowledge to operate the computer for use in their study and personal activities. Similarly the study by Mohamed (2011) shows that, majority 170(98.3%) of respondents reported that they personally own a computer. Only 1.7% of them have access to their family computer. 167 (96%) of them claimed that they access to Internet with their own computer. There were more than 89% of the students believed that they were able to complete their assignment on time if they have access to the Internet, computer and printing facilities. Contradictory to previous studies, the study by Manhas (2009) depicts that only 73.7% of dental teachers and students own personal computers or laptops. 70.8% of respondents access the Internet at college or workplace, while 19.3% accessed at home. 80.2% felt that the electronic resources cannot replace the physical resources (print) that it only supplements the print resources.

In case of Ayatollahi, Ayatollahi and Bahrololoomi (2010), 79% of the students used the Internet in various frequencies. In general, female students used the Internet more often than their male counterparts ($P < 0.0001$). Although 13.79% of students used the Internet to retrieve general information,

dental topics were searched in the Internet more frequently. The texts were the most commonly accessed materials (73.9%). Clinical photographs were accessed by 47.9% and radiographic and histo-pathologic materials by 12.3% and 10.9% of the students, respectively. Students stated that they could find required information on dental subjects in English sites (96.6%) much more frequently than in the Farsi sites (78%). Another study by Nurgul Komerik (2005) conducted a study on use of Internet among dental students in Turkey reveals that, 93% of the students use the Internet in various frequencies. 7% stated that they do not know how to use the Internet and, in this regard, the gender proportion was higher in the female students ($p=0.026$). In general, male students use the Internet more often than their female counterparts ($p<0.001$). To obtain information on dental topics, students generally referred to lecture handouts or textbooks (76%) while 32% accessed the Internet. Students who use the Internet to obtain information on dental topics most commonly preferred the university sites (71%), followed by search engines by performing key word searches (47%). The texts are the most commonly accessed materials (83%). Clinical photographs were accessed by 53% and histo-pathologic and radiographic materials by 14% of the students.

In case of Walmsley *et al.* (2003) all students and staff have access to computers and Internet at the university. The majority (72%) of students had access to a computer and 53% also have access to the Internet at home. Of the academic staff, 91% have a computer and 68% have access to the Internet at home. The reasons for using the Internet differed between staff and students. Whilst equal proportions of students used the Internet for dentistry (38%) and for pleasure (35%), a higher proportion of staff used the Internet more for dentistry (36%) than for pleasure (14%). Students highlighted cost and time as barriers to Internet use, where as staff lacked confidence in their ability to use the Internet. Less than half (44%) of the students are confident in the accuracy of information from the Internet compared to almost two-thirds (64%) of staff. Similarly study of Chestnutt and Reynolds (2006) illustrate that, the most common topics enquired after were cosmetic procedures, dental amalgam and implants. A minority of dentists, 47 (11%) viewed the Internet as a threat to the dentist-patient relationship. However, 169 (39%) agreed information gained from the Internet had led to patients demanding inappropriate care or more complex treatment (135/31%). Having to take time to discuss Internet material was viewed as a burden by 93 practitioners. However, only 18.7% claimed never to use the Internet for their own continuing professional development. E-mail was used to communicate with patients by 42 dentists, mainly to make appointments. Contradictory to earlier studies Uribe and Marino (2006) study reveals that, 96.4% used the Internet. Most students had home Internet connections (73.4%). The most commonly used Internet sites on at least a weekly basis were: email (92.2%); and search engines (88.3%). However, a few (21.1%) used the Internet to search for

dental information for their studies on at least a weekly basis. Furthermore, although the majority (70.4%) found Internet use easy/very easy, 56.2% indicated that any search for information was easy/very easy. The majority (72.2%) indicated that the use of virtual education would not affect their class attendance.

Another study by Marya *et al.* (2013) studied on use of Internet, of the 529 students, 137 (25.89%) were males and 292(74.11%) were females. Overall, 470 (88.84%) students were found to be Internet users. Of them, 207 (44%) used it for academic purposes; and 358 (76.17%) found pictures on the Internet more useful than the text. Of the total users, 386 (82.12%) students spent 1 hour or less at every Internet usage session, while only 19 (4.1%) spent more than 2 hours. Only 38 (8%) students reported that they did not know how to use Internet for academic purposes.

Similar study by Satheesan *et al.* (2016) surveyed on use of Internet, wikipedia is the most recommended site for dental reference followed by Slide Share especially for presentations and articles. About 60.63% participants are positively affected by the Internet on studies and professional work. The younger dentists surf the Internet more for references and self-updating; moreover, prefer using the latest updates from the Internet over regular textbooks for teaching. Another study by Anasuya (2017), majority of the medical professional respondents (45.24%) have 2-3 hours, (23.80%) have 3-4 hours, (9.52%) have 4-5 hours, (4.77%) have above 5 hours of access to Internet. It could be seen clearly from the above discussion that below 2 hours of access to Internet is quite common among all the respondents. Medical respondents rank in the first position with respect to their overall preference to medical CD-ROM databases, dental respondents the second, medical technology third, pharmacy fourth, nursing fifth, radiography sixth, and optometry the last.

III. OBJECTIVES OF THE STUDY

The major objectives of the present study are

1. To know the place and purpose of use of Internet by Dental students and faculty members.
2. To find out the average time spent on use of Internet and use of various Internet applications in pursuit of their study, teaching, research and practice.
3. To understand the problems encountered by the students and faculty members while using Internet.

IV. SCOPE AND METHODOLOGY

The purpose of present study is to investigate the use of Internet and e-resources among students and faculty members of Dental sciences. The scope of the study is confined to only three Dental Colleges in two districts viz. Chitradurga and Davanagere.

A. Survey Instrument

To achieve the objectives of the study, a structured questionnaire was designed after reviewing related literature. Questionnaire consisted of questions on years of experience in the use of Internet, frequency of use of Internet etc. Questionnaires were physically delivered to students and faculty members. Repeated visits were made to get back the duly filled questionnaires. A total of 200 questionnaires were distributed randomly and out of which 153 duly filled copies were returned, constituting a 76.5% response rate.

V. FINDINGS AND DISCUSSION

TABLE I DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Demography of respondents		Counts	Percentage
Gender	Male	72	47.36
	Female	81	53.28
Designation	Students	101	66.01
	Faculty	52	33.98
Experience	1-5 years	36	69.23
	5-10 years	09	17.30
	>10 years	07	13.46

The gender wise distribution of respondents is illustrated in table I. It shows that 66.01% of respondents are students and 33.98% respondents are faculty members. There are more females respondents (53.28%) than males (47.36%). Among the faculty respondents, 69.23 % have 1-5 years experience, 17.3% have 5-10 years of experience and only 13.46 % have more than 10 years of experience.

TABLE II PLACE OF USING COMPUTER

Respondents	Place		
	College	Home	Internet Café
Faculty Member(n=52)	41(78.84)	39(75)	15(28.84)
Students (n=101)	72(71.28)	62(61.38)	35(35.65)
Total (n=153)	112(73.20)	101(66)	50(32.67)

$(\chi^2=2.046, df=3, p=.563, c=.087)$

Further, respondents are asked to indicate their places of using computer. Not surprisingly, both students and faculty members used computer in their colleges (table II). The respondents also showed their interest to use computer at home (66%) followed by Internet café (32.67%). Only 32.67% of respondents preferred to use computer at Internet café.

TABLE III EXPERIENCE IN USE OF COMPUTER

Respondents	Time			
	1-2 years	3-5 years	6-10 years	More than 10 years
Faculty Member(n=52)	13(25)	17(32.69)	17(32.69)	5 (9.61)
Students (n=101)	26(25.74)	35(34.65)	20(19.8)	20(19.8)
Total (n=153)	39(25.49)	52(33.98)	37(24.18)	25(16.33)

$(\chi^2=6.707, df=5, p=.243, c=.205)$

Respondents are asked to mention the experience in use of computer and the data are presented in Table III. One third of the respondents (33.98%) had 3-5 years experience in using computer. followed 1-2 years (25.49%), 6-10 years (24.18%), more than ten years of experience (16.33%). It is evident from the study that students and faculty members had started using computers from more than ten years.

Table IV shows the high use of Internet by students and faculty members. In total 96.15% of faculty members and 100% of students used Internet for various purposes.

TABLE IV USE OF INTERNET

Respondents	Response	
	Yes	No
Faculty Member(n=52)	50 (96.15)	02 (3.84)
Students (n=101)	101(100)	-
Total (n=153)	151(98.69)	02(1.30)

Note: Number given in the parenthesis represents the Percentages

It is evident from table IV that, majority of the respondents (98.69%) are Internet literates. While only 2 respondents (1.3%) were not Internet literates. It is also evident that all the student respondents were Internet literates.

The different place in which they accessed the Internet is presented in table V. Majority of them have their personal computer at home (68%) faculty members and 61.38% students and thus they are able to access to Internet at home.

TABLE V PLACE OF USE OF INTERNET

Respondents	Place				
	College	Department	Home	Internet Cafe	Others
Faculty Member(n=50)	38(76)	27(54)	34(68)	20(40)	05(10)
Students (n=101)	46(45.54)	11(10.89)	62(61.38)	37(36.63)	11(10.89)
Total (n=151)	84(55.62)	38(25.16)	96(63.57)	57(37.74)	16(10.59)

($\chi^2=17.003$, $df=4$, $p=.002$, $c=.235$)

Majority of the faculty members accessed Internet at college (76%) followed by home (68%) and department (54%). 61.38% of students accessed Internet at home, while 45.54% at college and 36.63% at Internet cafes. The average usage of Internet by students and faculty members are commonly at home (63.57%), college (55.62%), Internet

cafes (37.74%), departments (25.16%) and other places like hostels or Paying Guests (10.59%).

One of the significant research questions was to find out the purpose for which they used Internet. Table VI indicates that different sources accessed through Internet.

TABLE VI PURPOSE OF USING INTERNET

Purpose	Faculty Member (n=50)	Students (n=101)	Total (n=151)
Teaching / study	27 (54)	38 (37.62)	65 (43.04)
Research	14 (28)	24 (23.76)	38 (25.16)
Browse journals	22 (44)	31 (30.69)	53 (35.09)
Literature search / to access web	19 (38)	26 (25.74)	45 (29.80)
E – Mail	29 (58)	62 (61.38)	91 (60.26)
Entertainment	13 (26)	33 (32.67)	46 (30.46)
To know the trends in the subject	15 (30)	20 (19.80)	35 (23.17)
To know the funding agency	2 (4)	05 (4.95)	07 (4.63)
Clinical cases	15 (30)	12 (11.88)	27 (17.88)
Patient communication	5 (10)	04 (3.96)	09 (5.96)
Diagnostic information	9 (18)	13 (12.87)	22 (14.56)
Practice marketing	2 (4)	06 (5.94)	08 (5.94)
Continuing education	13 (26)	24 (23.76)	37 (24.50)

Number given in the parenthesis represents the Percentages

Results of the study indicate there is a significant difference in the use of Internet by faculty members and students. 58% of the faculty members used Internet for e-mail followed by teaching (54%), browsing the journals (44%), literature search (38%), clinical classes and to know the trends in the subject (30%) and continuing education (26%) etc. 61.38% of students used Internet for e-mail followed by entertainment (32.67%), studying (32.62%), browsing the journals (30.69%) and literature search (25.74%) etc.

Respondents primarily used the Internet for checking e-mail (60.26%), teaching/study (43.04%), browse (35.09%) and entertainment (30.46%).

The use of Internet for communication purpose was higher among students than faculty members and use of Internet for teaching/study was more among faculty members than students.

TABLE VII AVERAGE TIME SPEND EVERY DAY IN USING THE INTERNET SERVICES

Internet Services	Respondents		
	Faculty Member (n=50)	Students (n=101)	Total (n=151)
E-Mail	37 (74)	67 (66.33)	104(68.87)
Discussion groups / news groups	13 (26)	25 (24.75)	38(25.16)
Browse e-journals	15 (30)	31(30.69)	46(30.46)
Literature search	13 (26)	20(19.80)	33(21.85)

Number given in the parenthesis represents the Percentages ($X^2=.411$ $df=3$ $p=.938$ $c=.043$)

Table VII illustrates the average time spent on different Internet services. Majority of faculty members (74%) spent more time for e-mails, while browsing journals (30%), literature search and discussion groups (26%). Majority (66.33%) of students spent more time for e-mails, while

browsing the journals (30.69%) and discussion groups (24.75%). Perhaps surprisingly the average time spent by students and faculty members (68.87%) is more for e-mail. While discussion groups/forums (25.16%), e-journals (30.46%) and literature search (21.85 %).

TABLE VIII METHODS OF LEARNING TO USE INTERNET

Methods of Learning	Respondents		
	Faculty Member (n=50)	Students (n=101)	Total (n=151)
College / Department	11(22)	04(3.96)	15(9.93)
Trial & error method	13(26)	23(22.77)	36(23.84)
Continuing education course	03(6)	13(12.87)	16(10.59)
With the help of friends / colleagues	17(34)	30(29.70)	47(31.12)
By reading books or articles	02(4)	06(5.94)	08(5.29)
By the library staff	01(2)	02(1.98)	03(1.98)

Number given in the parenthesis represents the Percentages
($X^2=11.226$ df=5 p=.047 c=.287)

The most popular method of acquiring the necessary skills to use Internet is with the help of friends/colleagues. Majority (31.12%) of respondents used this method to learn the Internet, trial and error method (23.84%), continuing education (10.59%) and some of the respondents by reading books and with the help of library staff. The faculty

members (34%) learnt the use of Internet with the help of friends/colleagues, while 26% by trial and error method etc. Students also learnt the use of Internet with the help of friends (29.70%), followed by trial and error (22.77%) and continuing education course (12.87%).

TABLE IX ACCESS AND AVAILABILITY OF THE INTERNET

Respondents	Access and Availability			
	Very good	Good	Adequate	Poor / very poor
Faculty Member(n=50)	13(26)	27 (54)	09(18)	01(2)
Students (n=101)	27(26.73)	46 (45.54)	26(25.74)	02(1.98)
Total (n=151)	40(26.49)	73(48.34)	35(23.17)	03(1.98)

($x^2=1.366$, df=3, p=.713 c=.095)

Over 98.69% of respondents have access to Internet and among those, about 48.34% felt that access and availability was good. While adequate (26.49%), very good (26.49%). Probably the rest of the respondents (1.98%) might have very poor quality of Internet access.

useful and it was less among faculty members (56%). It is very clear that students and faculty members gave significantly higher rating to the use fullness of Internet sources compare to traditional source of information.

TABLE X OPINION ABOUT THE USEFULNESS OF INTERNET RESOURCES

Respondents	Opinion		
	More Useful	Useful	Less Useful
Faculty Member (n=50)	28 (56)	21 (42)	-
Students (n=101)	62 (61.38)	29(28.71)	01 (.99)
Total (n=151)	90 (59.60)	50 33.11)	01 (.66)

Note: Number given in the parenthesis represents the Percentage
($X^2=2.217$ df=2 p=.330 c=.124)

Over 98.69% of respondents have access to Internet and their opinion about the usefulness, majority (59.6%) of the respondents found more useful, 33.11% found only useful. Majority of the students (61.38%) felt Internet was more

Though the Internet has become most popular information source among faculty members and students of Dental Sciences. The majority of users at these colleges had obstacles in using the Internet. The specific problems faced by users are given in table XII.

Among the 98.69% respondents who used Internet some of them faced obstacles, 49.66% faced line busy problem. While 44.37% faced viruses, 31.78% of them opinioned that cost of the using Internet was the major problem and 9.93% faced limited computers available. The problems faced by the faculty are viruses (54%), line busy problem (42%) and cost of the Internet (22%) and the problems faced by students are line busy problem (52.47%), viruses (39.60%) and cost of the Internet (36.63%).

TABLE XII OBSTACLES IN USING INTERNET

Respondents	Obstacles			
	Viruses	Cost of Internet	Time if the line is busy	Non-availability of computers
Faculty Member(n=50)	27(54)	11(22)	22(44)	06(12)
Students (n=101)	40(39.60)	37(36.63)	5(52.47)	09(8.91)
Total (n=151)	67(44.37)	48(31.78)	75(49.66)	15(9.93)

($\chi^2=4.608$, $df=3$, $p=.203$ $c=.148$)

VI. CONCLUSION

The findings of the study show that student and faculty members who participated in this survey were aware of Internet and its usage. Majority of respondents (98.69%) were using Internet for their teaching, research, practice and academic purpose. Students and faculty members accessed Internet at home (63.57%), while 55.62% at college, 37.48% at Internet cafes. E-mail was the main Internet application used by the respondents. Majority of them felt that they were most competent in skills and basically training is not necessary. Many of the respondents learnt about the Internet and its usage through personal study or by self taught. 59.6% of respondents felt Internet was more useful for their academic activities. Keeping this in view the study suggests that institution or organizations should provide necessary infrastructure facilities to academic community.

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