POST GRADUATE RESIDENTS' COMPUTER ATTITUDE AND SELF EFFICACY – A STUDY OF SIX DIFFERENT COLLEGES

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ABSTRACT:

Introduction: Computers evolved as essential element in healthcare services for both patient treatment and patient education. There haven't been many studies done to assess the application of computers in India's many fields. **Aim:** To determine knowledge, attitude and practice amongst postgraduates of 6 colleges with regard to using computers in their respective fields. **Materials and methods**: A cross sectional study was conducted across six different colleges of Teerthanker Mahaveer University, Moradabad. Google forms was used to create a self - administrated questionnaire. **Results:** They could use computers for basic activities, but they had trouble with more complicated ones, such as using databases, installing and configuring hardware and software, and using editing applications. **Conclusion:** While many postgraduate students lack formal training and frequently utilize computers still maximum of them nonetheless felt compelled for the same. If offered, computer-based guidance will produce better practitioners

Key-words: Computer literacy, Knowledge, attitude, practice, Post graduate students

INTRODUCTION

At the moment, computers represent the biggest scientific advancements. Its effects all over planet are numerous. The field of computing and information technology is advancing the quickest.[1] The medical and health sciences are that dimensions where technology seem to be of substantial use. Application of technology simplifies the job of practitioners and improves patient comfort during therapy. Among the various jobs that computers are used for in the medical and dental fields are giving the right information to patients, upkeep of various databases and databases, communication, knowledge of new products, digital imaging ,knowledge of recent literature, marketing continuing education, insurance claim resolution , teledentistry, telemedicine, quality assurance and many more duties.[2,3,4] In 1971, University of Kentucky added computers to the dental curriculum.[2]The adoption of computers in healthcare Education improved

students' academic performance and led to improvements in their perceptions of computers and teaching.[5,6,7]Basic duties that were formerly completed on paper are now completed on computers in nursing administration. It is also possible to keep papers for pre-printing on the computer and print them as needed, such as discharge instructions or preoperative instructions.[8] Despite the fact that health informatics is frequently utilised to support the majority of the services in the many professional fields of health, the bulk of computational applications are really directly tied to physiotherapy.[9] Computers in the pharmacy are used for business information, drug data, records, drug management. Computers' primary duty is to gather information, store it, process it, and then disseminate it. This constant flow of information demonstrates how well any system is performing.[10,11]

SUBJECTS AND METHODS

To evaluate the post graduates' skills, aptitude (including basic operations, software handling, and web usage), practice, and perspectives, a pre-tested questionnaire[31] with 35 components was used. Except for attitudes, which contained 10 questions, each part had 5 questions. Except for the practice part, which offered three alternatives for each question, all questions had binary choices of Yes or No. For maintaining anonymity, students were encouraged not to mention their names but they were inquired about their age, gender, and their particular college. Teerthanker Mahaveer University was the site of study. The study comprised postgraduates from six colleges. Teerthanker Mahaveer dental college and research centre's research and ethics committee provided approval for the study. Students from the respective colleges and departments were given the questionnaire via various social networking sites in the form of a Google-doc, and they were given ample time to complete it as they were continuously reminded to do so over the course of a week to have the maximum response rate. There were 1244 questionnaire distributed in all, and 1162 participants answered them. 93.4% of participants responded. The questionnaire was evaluated for precision and the data analysis was done using SPSS for Windows 20.0. For continuous data, the standard deviation and mean were computed. For data with categories, frequency and percentage were computed.95% Confidence interval was created. Wherever possible, we applied chi-square tests. Level of significance was kept at $P<0.05$.

RESULTS

Google-doc forms of pre-tested questionnaire[31] via various social networking platforms like Whatsapp, telegram etc. were evenly provided to all post-graduate students of various colleges of Teerthanker Mahaveer University. There were 545 males and 617 females on an average who responded to the questionnaire. The respondents' mean age was 27.8±1.4 years.(TABLE-I)

Nearly 80.08% (n=394) of medical postgraduates who were asked to about their level of computer expertise said they had studied computers in high school. Amongst University postgraduates 99%(n=20.01%) of medical postgraduates said that they studied computer science in 12th.Only 1.98%(n=2) of nursing postgraduates were in touch with this subject in their bachelors.(Table-II)

Postgraduates could carry out easy tasks, but only a very few them knew how to care for their hardware. A response of 1 was assigned to every positive response. Overall score for all postgraduates for basic operation was 3.7 ± 0.8(Table -III)

When other parameters were assessed for assessing software skills regarding software handling we came to know that nearly

99.59%(n=490) of medical postgraduates could generate basic documents. Nearly 91.05%(n=448) of medical postgraduates were easily able to create presentations. Amongst them 90.61%(n=446) of medical postgraduates were easily able to insert animations into power point. 89.45%(n=22) of pharmacy postgraduates generated charts and graphs utilising spreadsheet software such as Excel. Overall score for all postgraduates for software handling was 3.5 ± 0.6.(Table-IV)

When it came to being evaluated for their software and internet usage, virtually all of them were able to perform basic tasks related to internet. Overall score for all postgraduates for internet use was 4.8 ± 0.9 (Table – V)

30.28%(n=149) of medical postgraduates used computers just in the room/at home and 59.75%(n=294) used computers both at college and at home. 28.7 %(n=334) of all postgraduates own a desktop, 40.27%(n=468) of all postgraduates own a laptop and 24.14% (n=281) of all postgraduates possess a desktop as well as a laptop.(Table – VI)

Only 1.86% (n=6) consider that computers are only for entertainment purposes. All students consider computers to be beneficial for dental academics, 98.62% (n=1146) consider computer make life easy. Only 52.58% (n=611) felt they had had adequate computer training.

		NUMBER	**PERCENTAGE**
GENDER	MALE	545	46.9%
	FEMALE	617	53.1%
AGE	< 25 YEARS	399	34.3%
	25-30 YEARS	568	48.9%
	>30 YEARS	195	16.8%
COLLEGE	MEDICAL (A)	492	42.3%
	DENTAL (B)	130	11.2%
	NURSING (C)	101	8.7%
	PHYSIOTHERAPY (D)	80	6.9%
	PHARMACY (E)	37	3.2%
	PARA-MEDICAL (F)	322	27.7%

TABLE I - Details about the study respondents

		A	B	C	D	E	F	TOTAL
Q.1(a)	I have studied computer as subject in 10th / matric / high school	394 80.08%	101 77.69%	74 73.26%	57 71.25%	27 72.97%	212 65.83%	**865** (848-882) **74.4%** (72.9%-75.9%)
Q.1(b)	I have studied computer as subject in 12th / intermediate	99 20.01%	24 18.46%	0 0%	0 0%	0 0%	14 4.34%	**137** (136-138) **11.7%** (11.7%-11.8%)
Q.1(c)	I have studied computer as subject in my bachelor	44 8.94%	10 7.69%	2 1.98%	2 2.5%	4 10.81%	11 3.41%	**73** (72-74) **6.28%** (6.19%-6.36%
Q.1(d)	I have done a course in computer from a private institute	59 11.99%	10 7.69%	8 7.92%	7 8.75%	2 5.4%	22 6.83%	**108** (103-113) **9.29%** (8.86%-9.72%)
Q.1(e)	I have learnt computer from any friend or family member	151 30.69%	70 53.84%	45 44.55%	26 32.5%	11 29.72%	99 30.74%	**402** (399-405) **34.59%** (34.33%-34.85%)

TABLE II - KNOWLEDGE ABOUT COMPUTERS

		A	B	C	D	E	F	TOTAL
Q.2(a)	I can start and shut down a computer	492 100%	130 100%	101 100%	80 100%	37 100%	322 100%	**1162** (1162-1162) **100%** (100%-100%)
Q.2(b)	I can create folders / sub folders and organize my files	491 99.76%	130 100%	101 100%	78 97.5%	34 91.89%	320 99.37%	**1154** (1152-1156) **99.31%** (99.13%-99.48%)
Q.2(c)	I can locate files in computer using search	491 99.76%	130 100%	101 100%	78 97.5%	32 86.4%	320 99.37%	**1152** (1150-1154) **99.13%** (98.96%-99.31%
Q.2(d)	I can install simple software	360 73.17%	82 63.07%	59 58.41%	45 56.25%	22 89.45%	223 69.25%	**791** (788-794) **68.07%** (67.81%-68.33%
Q.2(e)	I can maintain my hardware	151 30.69%	70 53.84%	45 44.55%	26 32.5%	11 39.72%	99 30.74%	**402** (399-405) **34.59%** (34.33%-34.85%)

TABLE III – SOFTWARE SKILLS – BASIC OPERATIONS

		A	B	C	D	E	F	TOTAL
Q.3(a)	I can use word processing software to create simple documents	490 99.59%	117 90%	85 84.15%	62 77.5%	33 89.18%	285 88.5%	**1072** (1069-1075) **92.25%** (91.99%-92.51%)
Q.3(b)	I can use power point to make presentations	448 91.05%	117 90%	85 84.15%	62 77.5%	33 89.18%	285 88.5%	**1030** (1022-1038) **88.64%** (87.95%-89.32%)
Q.3(c)	I can insert animation into power point	446 90.61%	117 90%	85 84.15%	62 77.5%	33 89.18%	285 88.5%	**1028** (1012-1044) **88.46%** (87.09%-89.84%)
Q.3(d)	I can use spreadsheet like excel to create graphs and charts	360 73.17%	82 63.07%	59 58.41%	45 56.25%	22 89.45%	223 69.25%	**791** (777-805) **68.07%** (66.86%-69.27%)
Q.3(e)	I can use photo editing software to edit photographs	198 40.24%	50 38.46%	33 32.67%	22 27.5%	11 29.74%	85 26.39%	**399** (390-408) **34.33%** (33.56%-35.11%)

TABLE IV : SOFTWARE SKILLS – SOFTWARE HANDLING

		A	B	C	D	E	F	TOTAL
Q.4(a)	I can connect to internet	492 100%	130 100%	101 100%	80 100%	37 100%	322 100%	**1162** (1162-1162) **100%** (100%-100%)
Q.4(b)	I can send and receive e-mail	492 100%	130 100%	101 100%	80 100%	37 100%	322 100%	**1162** (1162-1162) **100%** (100%-100%)
Q.4(c)	I can send and receive attachment files via e-mail	487 98.98%	117 90%	85 84.15%	62 77.5%	35 94.59%	285 88.5%	**1072** (1070-1074) **92.16%** (92.08%-92.42%)
Q.4(d)	I can chat with others on internet	492 100%	130 100%	101 100%	80 100%	37 100%	322 100%	**1162** (1162-1162) **100%** (100%-100%)
Q.4(e)	I can search material on internet	492 100%	130 100%	101 100%	80 100%	37 100%	322 100%	**1162** (1162-1162) **100%** (100%-100%)

TABLE – V : SOFTWARE SKILLS – INTERNET USE

			A	B	C	D	E	F	TOTAL
Q.5(a)	I use computer in	College	149 30.28 % 	36 27.69%	26 25.74%	16 20%	13 35.13%	74 22.98%	**314**(300-328) **27.02%**(25.81%-28.22%)
		Hostel/Home	49 9.95%	13 10%	8 7.92%	4 5%	6 16.21%	152 47.2%	**232** (228-236) **19.96%** (19.62%-20.3%)
		Both	294 59.75 % 	81 62.30%	67 66.36%	60 75%	15 40.54%	92 28.57%	**609** (590-628) **52.4%** (50.77%-54.04%)
Q.5(b)	I own	Desktop	96 19.54 % 	25 19.23%	38 37.62%	42 52.5%	19 51.35%	114 35.4%	**334** (330-338) **28.74%** (28.39%-29.08%)
		Laptop	191 38.82 % 	76 58.46%	50 49.5%	31 38.75%	14 37.83%	106 32.91%	**468** (460-476) **40.27%** (39.58%-40.96%)
		Both	190 38.61 % 	26 21%	12 11.88%	3 3.75%	2 5.4%	48 14.9%	**281** (270-292) **24.18%** (23.23%-25.12%)

Q.5(c)	I use computer	Daily	259 52.64 % 	62 47.69%	40 39.60%	23 28.75%	7 18.91%	39 12.11%	**430** (422-438) **37%** (36.31%-37.69%)
		Often	209 42.47 % 	65 50%	58 57.42%	47 58.75%	22 59.45%	213 66.14%	**614** (609-619) **52.83%** (52.40%-53.27%)
		Rarely	24 4.87%	3 2.30%	3 2.97%	10 12.5%	8 21.62%	70 21.73%	**118** (114-122) **10.15%** (9.8%-10.49%)
Q.5(d)	I check my e-mail	Daily	174 35.36 % 	44 33.84%	28 27.72%	18 22.5%	8 21.62%	82 25.46%	**354** (350-358) **30.46%** (30.12%-30.8%)
		Often	260 52.84 % 	76 58.46%	52 51.48%	36 45%	16 43.24%	192 59.62%	**632** (622-642) **54.38%** (53.52%-55.24%)
		Rarely	58 11.78 % 	10 76.92%	21 1.98%	26 32.5%	13 35.13%	48 14.9%	**176** (168-184) **15.14%** (14.45%-15.83%)

Q.5(e)	I use internet to check for academic informatio n	Daily	174 35.36 %	48 36.92%	26 25.74%	10 12.5%	5 13.51%	59 18.32%	**322** (318-326) **27.71%** (27.36%-28.05%)
		Often	274 55.69 %	76 58.46%	63 62.37%	60 75%	27 72.97%	227 70.49%	**727** (725-729) **62.56%** (62.39%--62.73%)
		Rarely	44 8.94%	6 4.61%	12 11.88%	10 12.5%	5 13.51%	36 11.18%	**113** (109-117) **9.72%** (9.38%-10.06%)

TABLE – VI: PRACTICES REGARDING COMPUTERS

DISCUSSION

The current study, which was done on postgraduate students from several institutions, may be used to determine the current extent of computer use among Indian postgraduates from various areas. The goal of this research is to determine if computer education should be included in postgraduate curriculum in India.

The majority of the postgraduates (74.4%) had learned the fundamentals of computers in the 10th grade. After the tenth grade, they were not exposed to any official computer instruction. A conclusion was made regarding the attendance of computer classes by 27.3% of Greek postgraduate students.[16,17]As a result, formal education is lacking. 95.2% of South Indian medical postgraduate students reported using self-learning to pick up computer skills. 16.7% of them read manuals, and 4.7% had gone to classes.[18] Given that "need is the mother of invention," using computers was a necessity that compelled postgraduates to learn using practical, readily accessible methods.

Computers are to be used by the postgraduates for many tasks. Students studying medicine in south India have been observed to utilise computers at similar high rates as postgraduates.[18] There have also been reports of people using the internet for non-academic activities.[19,20] It was discovered that this set of students used the internet more often than Turkish undergraduates.[15] Although the study indicates that pupils had high skill levels, there may have been an overestimation, as has been shown in prior studies.[21]

Few dental schools in the United States have introduced required laptop programs in which students are provided laptops with the essential software at a reduced cost.[22]In some US colleges, 12.6 hours each week were invested using computers for educational purposes.[23] The internet is the most popular resource for information, updates, and latest developments pertaining to dentistry, and it is also a simple way to get information on dental education.[26,27] Nevertheless, pupils still experience a digital gap.[28] There are some students who are comfortable using computers and the internet, but there are also those who are not. India is using computers less often than the West.[26] Future dentistry education may completely switch to computers. The usage of online assessments will be employed to evaluate pupils[29] since they offer consistent evaluations free from examiner bias.[30] More research is needed to

assess the overall attitudes and perceptions of dental healthcare practitioners toward digital technologies, which influences the successful use of data technology-enabled solutions in dental care.[32]

CONCLUSION

Even though Indian postgraduate students use computers, they feel that their colleges should offer computer training. It is time for the regulatory authorities to carry out a need assessment and incorporate computer training into their curricula for both undergraduate and graduate students. Six distinct colleges are included in the current analysis. It is necessary to do additional research in this area, engaging postgraduates from various academic years and more medical, dentistry, nursing, physiotherapy, pharmacy, and paramedical institutions from throughout India. On the basis of more study, appropriate actions might be implemented to raise the calibre of Indian postgraduates and make them competitive with postgraduates from other industrialised nations.

KEY MESSAGE

It is moment for authorities to undertake needed evaluation and integrate training courses into undergraduate and postgraduate curriculum. This can help in raising better quality of postgraduate as well as undergraduate students so that their overall calibre is raised.

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