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Research Article

IMPACT OF MASS MEDIA AND E-LEARNING IN MEDICAL STUDENTS OF GOVERNMENT MEDICAL COLLEGE, PAURI GARHWAL REGION, UTTARKHAND, NORTH INDIA

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ABSTRACT

Background: The main objective of the research paper is focused on impact of mass media internet on learning behavior of undergraduate medical students. An overall 90 students were sampled from 400 medical students who were posted in the H. N. Bahuguna Base Teaching Hospital attached to the above medical college excluding all the first year MBBS students.
Methods: This was an one time observational cross sectional study. The data was collected by questionnaire set by experienced faculty members of the institution.
Results: On an average each male student spends about 22 minutes and a female spends 20.2 minutes per day in reading the news papers. Over all the magazine reading trend among the students was 28.2% in males and 23.5% in females. The average time spent in reading magazines per sitting was 22.5 minutes in males 27.5 minutes in females. The average time spent by students with teacher in the class room or beside (60%) i.e., for 3 hours and 30 minutes for both the sexes. The average time spent in self study (40%) either at library or in the hostel is 2 hours 18 minutes for males and 2 hours 28 minutes for girls including e-learning. The average time spent in self study using smart phones 25 minutes for males and 46 for females. The average time spent for e- learning by use of lap tops 51 minutes for males and 47 minutes for females.
Conclusions: All students possessed mobile phones and 48 students possessed laptops. Analysis of time spent by the students in learning shows males spend 24.75% and females 48.4% of their total study time in downloading and learning from the internet. Average time spent for entertainment using the above gadets is 55 minutes for boys and 21 minutes for girls. Those who did not possess lap tops, shared or borrowed from their friends were 15.5% and about 8.3% were visiting cyber café. The females were accessing and using internet more than the males either for learning or entertainment.

INTRODUCTION

In the Pre-independence era, Indian students obtained knowledge through books, news papers, magazines, radio and more over teachers were also popular sources of knowledge (Michael Edwards, 1994). During Post independence period in addition to the above sources, the cinemas held sway over the masses and students as well (Suresh Chandra Ghosh, 1998).

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The introducing of television in early 1980`s and privatization of channels in late 1980`s attracted the students to derive benefit from TV education channels (Chaudhary and Sohanvir, 1992). With the development of Microsoft personal computers and opening of internet to public paved the way to learning from TVs to laptops. There is a paradigm shift in the way our students have been assimilating knowledge in the past few decades. During the beginning of this century, the invasion of cell phones into private lives has revolutionized the ways and means of communication. In this decade of android version of advanced cell phones, 4G connectivity and opening up of social media networks like face book, Skype and twitter, the students

are in the midst of information jungle. For the current generation, newspapers, magazines and text books have become outdated methods of learning. The usage of double SIM android 4.0 .0 and above versions of smart phones, tablets are popular among the students. The Google and yahoo search engines, access to Wikipedia and other open source of knowledge on all subjects is easily and freely accessible. These mobile devices are connected to the internet all round the clock to provide information as well as cheap entertainment in the form of music, movies, sports and live shows. The easy access to mobile devices and cheap connectivity, active social net working rouse the young minds to seek thrills, excitement and misadventure which are not in their better interests. On the other hand the mobile phone applications aid students to prepare for examinations (Times of India 2015).

Instead of attending to lecture classes regularly, bedsides clinics, seminars and continued medical education programs organized by the teaching faculty, today medical students squander their time in the pursuit of pleasure provided by the above modern gadgets. Today the internet offers many free or paid online videos on teaching programs through YouTube, the presentations which seem to be more attractive to download and view off line. The academic teachers or the toiling doctors have ceased to be role models for the current generation of students. This study has focussed on how far this is true in a rural Government Medical College set up which is tucked away in the Garhwal hills of Alkananda valley located in Pauri-Garhwal district of Uttarkhand. Veer Chandra Singh Garhwal Government Medical and Research Institute was established 7 years ago to meet the needs of the rural population in the hilly areas of Chamoli, Rudraprayag, Pauri and Tehri districts of Uttarkhand State. It is located 105 km away from the town of Rishikesh.

Aims and objectives

The main objective of the research paper is focused on impact of mass media, smart cell phones and laptops with internet access on learning behavior of undergraduate medical students. This is an observational cross-sectional study of medical students. There are a number studies in India and abroad on impact of learning more confined to addressing the preclinical students[4-9,10-13]. In this study a sample 90 clinical students from 6th and 9th semesters were chosen for convenience and accessibility and were assessed as part of pilot study. This study excludes pre-clinical students. This is qualitative research based on co-operative enquiry.

MATERIALS AND METHODS

An overall 90 students were sampled from 400 medical students posted in the H. N. Bahuguna Base Teaching Hospital attached to the above medical college excluding all the first year MBBS students. Out of these 90 students, 52 were from VIth semester; 31 were females and 21 were males. Among 38 students from IXth semester, 18 were males and 20 were females. They were given a twelve point questionnaire set by panel of experienced teachers from the various clinical faculties, after obtaining permission from the ethical committee. After the lecture classes, the attending students were given enough time to think and answer the questionnaire. Those who were absent on that day did not participate in the study. The data was tabulated and descriptive statistical methods were applied for analysis of data.

Observations: The habit of newspaper reading among the medical students is shown in Table 1. The average time spent in reading newspapers is less than 15 minutes in 37 students, 15 to 30 minutes in 9 students and more than 30 minutes in 14 students. On an average each male student spends about 22 minutes and a female spends about 20.2 minutes per day in reading news papers. . The average time spent in reading text books per day by males was for 1.41 hours and females read for 1.35 hours. The average time spent in self study using smart phones 25 minutes for males and 46 minutes for females. The average time spent for e- learning by use of lap tops was 51 minutes for males and 47 minutes for females.

Only 58 out of 90 students i.e., on an average 64.4% students read news papers on daily basis or weekly. Out of which 36.7% were females and 27.7% were males. The reasons given by the students who were not reading newspapers include; 11 students had no time, 4 were not interested, 2 students did not have the habit of reading news papers and the rest complained of not having access to news papers in the hostel premises and the location of library was at a great distance.

Reading magazines

Over all magazine reading was 28.2% in male students and 25.5% in females. Out of 11 male students who were reading magazines, 6 males were reading weekly; 5 males were reading monthly; 6 politics related 6, sports related 3 and movies. Five males were reading medical journals and two scientific journals. Average time spent by male students per sitting was 22.5 minutes. Among 13 females who were reading magazines; 9 read weekly, 4 students read monthly, and the topics covered were more extensive when compared to male students. Eight students read medical magazines, six of them read scientific topics, and two students read political issues, seven about movies and two on sports. Two females borrowed magazines, and two bought magazines. Average time spent by female students per sitting was 27.5 minutes.

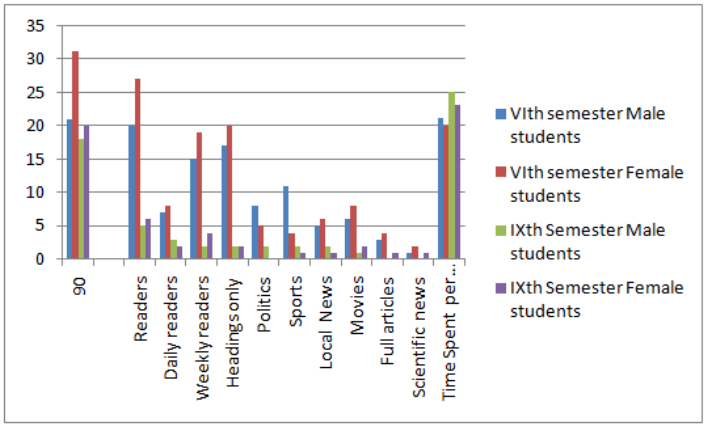
Mobile phones

All students possessed mobile phones. 20 male students possessed ordinary cell phones and 19 possessed smart phones. All female students possessed phones; thirty girls had smart phones while 21 used ordinary cell phones. The details of the cell phone used are shown in table 3 and 4, and also illustrated in graph 3 and 4 below. About 16 males and 31 female students used the mobile phones for downloading and learning purpose.

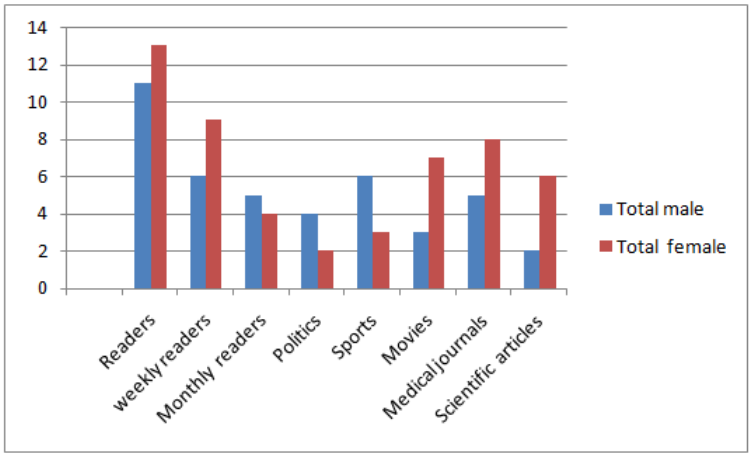
Laptops: About 48 students possessed lap tops, female students were 28 and male students were 20 as shown in detail in table 5. Daily users of laptops were 10 males and 22 females, weekly users were 10 males and 6 females. About 62.5% were downloading for reading subjects of which 75% were females and 45% were males. The average time spent in entertaining from laptops were movie viewing 62.5%, music listening 50%, social networking 14.6% and video gaming4.2%. Those who did not possess lap tops, shared or borrowed from their friends were 15.5% and about 8.3% were visiting cyber café.

Table 1. The following table shows the habit of newspaper reading among MBBS students

Student category	VIth semester (52)		IXth Semester (38)		Total male	Total female
Number (90)	Male 21	Fem (31)	Male (18)	Fem (20)	(39)	(51)
Readers	20	27	5	6	25	33
Daily readers	7	8	3	2	10	10
Weekly readers	15	19	2	4	17	23
Headings only	17	20	2	2	19	22
Politics	8	5	2	0	13	7
Sports	11	4	2	1	15	5
Local News	5	6	2	1	7	7
Movies	6	8	1	2	7	10
Full articles	3	4	0	1	3	5
Scientific news	1	2	0	1	1	3
Time/student(min)	21.1	20	25	23	22	20.2



Graph 1. Shows the newspaper reading details among medical students



Graph 2. Showing the details of magazine readers among students

Graph 5 depicts that females were accessing and using internet more than the males either for learning or entertainment.

Summary of time spent: The average time spent by students with teachers in class room and beside is for 3 hours and 30 minutes (60%) for both sexes as shown in table 6. The average time spent in self study (40%) either at library or in the hostel is 2 hours 18 minutes for males and 2 hours 28 minutes for girls including e-learning. Analysis of time spent by the students in e-learning shows males spend 24.75% and females spend about 48.4% of their total study time in downloading and learning from the internet.

Average time spent for entertainment using the above gadgets is 55 minutes for boys and 81 minutes for girls as shown in table 7. The average time spent in entertainment compared to studies is 15.8% in males and 22.5% in females.

DISCUSSION

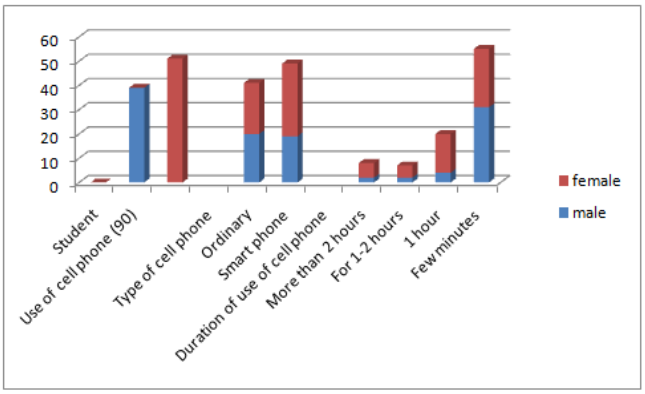
The learning trends of the present day students have shifted from teacher guidance to self oriented learning with the use of lap tops and android mobile phones and 24 hours of internet connectivity.

Table 2 .Showing magazine reading habits of among the students

Student category	VIth semester (52)		IXth Semester(38)		Total male	Total female
Number (90)	Male 21	Fem (31)	Male (18)	Fem (20)	(39)	(51)
Readers	5	9	6	4	11	13
weekly readers	2	7	4	2	6	9
Monthly readers	3	2	2	2	5	4
Politics	2	1	2	1	4	2
Sports	4	1	2	2	6	3
Movies	2	5	1	2	3	7
Medical journals	2	6	3	2	5	8
Scientific articles	1	5	1	1	2	6
Time/student(min)	20	20	25	35	22.5	27.5

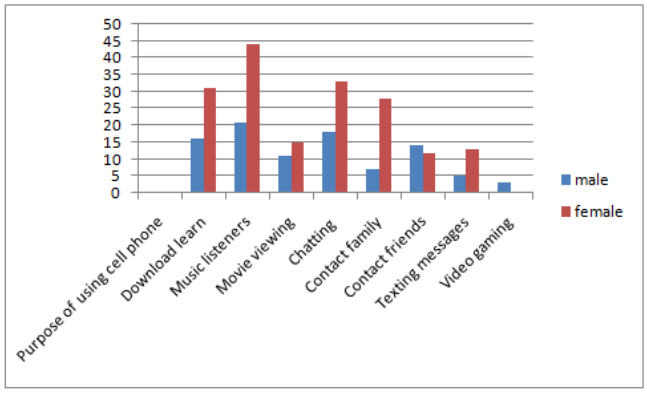
Table 3. Shows the details of cell phone use by the students

Student Use of cell phone (90)	Male Students (39)	Female Students (51)	Percentage Males (43.3)	Percentage Females (57.7)	Total percentage (100)
Type of cell phone					
Ordinary	20	21	51.3	41.2	45.6
Smart phone	19	30	48.7	58.8	54.4
Duration of use of cell phone					
More than 2 hours	2	6	5.1	11.8	8.9
For 1-2 hours	2	5	5.1	9.8	7.8
1 hour	4	16	10.3	31.4	22.2
Few minutes	31	24	79.5	47.1	61.1



Graph 3. Showing the details of cell phone used by students

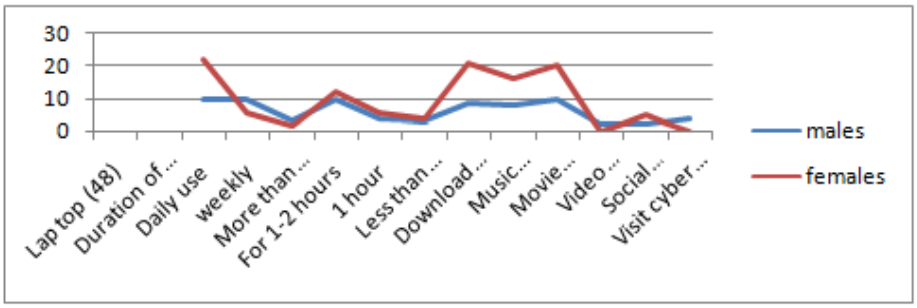
Table 4. Purpose of using cell phone					
Download learn	16	31	41.0	60.8	52.2
Music listeners	21	44	53.9	86.3	72.2
Movie viewing	11	15	28.2	29.4	40.0
Chatting	18	33	46.2	64.7	56.7
Contact family	7	28	17.9	54.9	38.9
Contact friends	14	12	35.9	23.5	28.9
Texting messages	5	13	12.8	25.5	20.0
Video gaming	3	0	7.8	0	3.3



Graph4. Showing the purpose of using Smart phones

Table 5. Shows Lap Top use among the students

Student Use of cell phone (90)	Male Students (39)	Female Students (51)	Percentage Males (43.3)	Percentage Females (57.7)	Total percentage (100)
Lap top (48)	20	28	51.3	41.2	45.6
Duration of use of lap top					
Daily use	10	22	50.0	78.6	66.6
weekly	10	6	50.0	28.6	37.5
More than 2 hours	3	6	15.0	41.5	18.9
For 1-2 hours	10	12	50.0	42.9	45.8
1 hour	4	6	20.0	21.4	20.8
Less than hour	3	4	15.0	14.3	14.6
Download learn	9	21	45.0	75.0	62.5
Music listeners	8	16	40.0	57.1	50.0
Movie viewing	10	20	50.0	71.4	62.5
Video gaming	2	0	10.0	0	4.2
Social networking	2	5	10.0	17.9	14.6
Visit cyber cafe	4	0	20.0	0	8.3



Graph 5. Showing details of lap top users among the students

Table 6. Table showing the learning time schedule of medical students

Student Activity	Males (39)		Females (51)	
STUDY PERIOD				
Lecture classes	1hour 30 min		1 hour 30 min	
Bedside clinics	2 hours		2 hours	
With teacher	3 hr 30 min		3hr 30 min	
News papers		22 min		20.2 min
Subjects	1hr	2 min	1hr	
Library		38 min		33.0 min
Cell phone		25 min		46.0 min
Lap top		51 min		47.0 min
Self study	2hr	18 min	2 hr	28.0 min
Total study	5hr	48 min	5 hr	58.0 min

Table 7. showing the time spent in entertainment by students

ENTERTAINMENT			
Music (8+16)	15 min		30 min
Chat (18+33)	10 min		16 min
Movies(11=15)	30min		35 min
Total time entertainment	55 min	1hr	81 min

As medical students we have the opportunity to participate fully in all stages of patient care, from helping formulate a diagnosis to proposing a management plan (Foong et al.,). Students perceived multimedia tools, scheduling tools, communication tools, collaborative authoring tools, learning management systems and electronic health records useful educational technologies for their learning (Erica Nelson, 2013). With this trend the medical teacher's role has fallen to orient them to cases in bed side clinics only.

This cannot be dispensed away even in the future times to come. With regard to teaching method, the combination of teaching methods is more effective when compared to didactic lectures (Priyadarshini *et al*., 2012). Educators and institutions must identify appropriate e-learning tools for use in resource-constrained settings, analyze the effect of these modalities in decreasing the already constrained faculty time, understand the practicality and cost-effectiveness of e-learning use in resource constrained countries, and develop financial models for the

sustainability of e-learning solutions (Seble Frehywot *et al*., 2013). Only when the appropriateness, feasibility and true costs of e-learning tools and methodologies are understood in the context of Low and Middle Income Countries (LMICs), can their impact upon the health of country populations be realized (Seble Frehywot *et al*., 2013).

This will definitely help the Indian Medical Graduates to match or better the international standards. Moreover looming board examinations and high stakes all stand as a barrier in front of students that limit their ability to adopt deep approach and lead them toward a lower-yield surface approach or smart phone access to internet. Perhaps a change in the format of the assessments would be beneficial. The decline in deep approach of medical students needs to be assessed and addressed by the curriculum developers (Sevsen Cebeci *et al*., 2013). It is possible to conduct online examinations in medical school regularly. The e-learning can enhance student interests and allows immediate feedback. Since e-learning is not well-established in India, we hope to create awareness and change the outlook of medical students in online teaching-learning and assessment program (Kumar *et al*., 2013). The information gained from evaluation can lead to changes in any aspect of teaching and evaluation methods.

Limitation of the study: This is observation cross- sectional pilot study of clinical students only. The sample size is small from 6th and 9th semesters only i.e., 90 (45%) out of 200. It is an exploratory qualitative research based on cooperative enquiry from the participating students, some of them were absent from the theory class when the data was collected. Although every body possessed mobile phones, smart phones with access to net was disproportionate. Among the females 30 out of 51 and among the males 20 out of 39 possessed smart phones. So also with regard to lap tops; 28 females and 20 males, a total of only 48 (53.3%) students were in possession of lap tops. The newspapers and magazines were available in the college library only, so was not accessible to those who never went to the library. There is a need to extend this pilot study to include all the students in the college.

Conclusions

All students possessed mobile phones and only 48 students possessed laptops. Analysis of time spent by the students in learning shows that on an average each male student spends about 22 minutes and female student spends 20.2 minutes per day in reading the news papers. Over all magazine reading was 28.2% in the male students and 23.5% in the females. The average time spent in reading magazines per sitting was 22.5 minutes in males 27.5 minutes in females. The average time spent by students with teacher in the class room or beside (60%) is for 3 hours and 30 minutes for both the sexes. The average time spent in self study using smart phones was 25 minutes for males and 46 minutes for females. The average time spent on e- learning by use of lap tops was 51 minutes for males and 47 minutes for females. Average time spent for entertainment using the above gadgets was 55 minutes for boys and 81 minutes for girls. Those who did not possess lap tops, shared or borrowed from their friends i.e., about 15.5% and about 8.3% were visiting cyber café for access to internet. The female students were accessing and using internet more than the male students either for learning or entertainment.

We as teachers need to take the Feedback from students frequently and to implement their requirements in their teaching curriculum and to encourage e-learning also. Curricular reforms to systematically address these above issues and to develop strategies to strengthen the medical education and health care system are needed at an institutional level & e-learning to be implemented at health universities who are involved in the curricular programmers'.

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