



A Cross Sectional Survey of Smart Phone Usage Amongst Residents of Medical College In Central India.

Dr Santosh Kumar Mishra

Resident Dept of Orthopaedics Gandhi Medical College Bhopal MP.

Dr Nisha Singh

Resident Dept of Community Medicine Gandhi Medical College Bhopal MP.

Dr Anshuli Trivedi

Assistant Professor Dept of Community Medicine Gandhi Medical College Bhopal MP.

Dr Mohan Shinde

Professor Dept of Community Medicine Gandhi Medical College Bhopal MP.

ABSTRACT

A cross sectional survey of smart phone usage amongst residents of medical college in Central India.

Introduction- There is increased use of smartphones & there apps by medical residents. It has made communication with peers & seniors easy. The study aims to understand pattern & impact of using smart phones by medical residents.

Methodology- A cross sectional survey using opportunistic sampling technique was done. The responses were coded appropriately. The data was compiled using MS-Excel 2007 & results interpreted in terms of percentages & proportions.

Result- In total 37.61% exchanged multimedia & 18.4% residents exchanged medical related texts through smart phone. In total 55.01% users had health problems due to prolonged usage of mobile phones most common being ophthalmic like dryness of the eye or foreign body sensation.

Conclusion- The use of smart phone has made life of residents easy by curtailing time required to initiate treatment & had made exchange of patient's data easy & fast.

KEYWORDS : cross-sectional survey, opportunistic sampling, medical residents.

Manuscript-

Introduction- In recent years the use of smart phones has been increasing rapidly in our society. Smart phones are a newer generation of cellular phones with integrated computer related functions capable of performing various tasks based on number of applications.¹ One can use the internet and surf to view desired medical information.² The users have found their lives becoming more convenient & hassle free since the induction of this technology. The introduction of the internet on mobile phones has made the exchange of information very easy. As most of the services of daily use are available online the use of internet has become invincible. As smart phones are compact they can be run at remote areas easily. The first frontier of mobile health care technology is out of clinic patient use of software applications (apps) and peripheral hardware that plugs into or attaches to a smart phone or tablet.³

It was seen that usage of smartphones helps in establishing a diagnosis rapidly as stated by Eric Topol, who has twice diagnosed arrhythmias on airplanes using a mobile electrocardiogram.⁴ Any information needed at a given moment can be found by search engines merely in fraction of minutes. This technology has also touched medical profession. It is of immense interest to understand the usage of smart phones in the medical profession. In general, medical professionals are frequently perceived to be less tech savvy. But these mobile application helps in promoting the concept of evidence based medical specialty. They help in clinching the diagnosis of patients. As smart phones have cameras through which a quick snapshot or a video can be taken. These can be exchanged with faculty members or senior residents to diagnose a medical condition. Any diagnostic tools like radiological films or laboratory reports can be exchanged amongst various personnel in the department/s. These can also be exchanged in a social messenger apps group. This means ensuring that all the members of the group are informed about the issue. Another use of this technology is telemedicine by which medical consultation can be given from higher centers to periphery without actually mobilizing the patient to higher health care center. This technology

also gives an opportunity of identifying a rare case & recording its findings, which can be subsequently utilized for educational uses. It is rather a common observation that most of the e-books being less bulky can be easily stashed away in smart phones & readily referred due to its easy approach.

But this technology is a double edged sword. One of the biggest challenges to the use of smart phones is its potential to distract the clinician and alienate the patient. It gives way to ultimate dependence on technology over people. Hence clinician becomes too focused on the data collection process rather than talking to patient, resulting in loss of the interpersonal & patient-doctor dialogue.³

The role of engineering had made individual dependent on them. Previously the personnel relied on memory to store information. Since the availability of this facility a limited information is learned. Their by producing a state of early dementia. Also smart phones had become so quintessential that in the outcome of their unavailability results in anxiety & stress. They had increased the budget of mobile recharges ESP data recharges. It is a common observation that users spend more time in the virtual world than in the material world. There is immense stress in users to gaze at the latest updates in any social messenger app & in many conditions to give feedback as soon as possible (asap). The continual use had also resulted in the growth of some medical disorders like fatigue in vision to musculoskeletal disorder termed as pain in finger called whatsapitis.⁵ This may also result in accidents like falling & road traffic injury which user may come across during texting. Also smartphones and associated devices have the potential to spread nosocomial infections as they are usually devices which are moved from unsterile OPD/wards to a highly sterile environment like operation theaters.³

The study aims to interpret the role of smart phones & their applications amongst medical residents in terms of the pattern of their use, duration spent on their use & impact of using smart phones in their lives.

Methodology-A cross sectional survey using a preformed pilot tested questionnaire was used to elicit information about the use of smart phones & mobile phone use. The questions pertaining to type, utility of application & average duration of its use were included. The work included the residents from all subjects & all year pursuing residency at Gandhi Medical College during December 2014 & January 2015. The information collected was coded & analyzed using MS excel-2007 & Epi info. The data were interpreted in terms of proportions & percentages.

Result –In total 109 resident doctors were interviewed. All the respondents were smart phone users & were interviewed in non duty hours. The mean age of respondents was 27.59 ± 2.49 years, of which 72.47% respondents were males. It was found that 33.02% used dual SIM phones as 77.08% respondents got very irritated in no network or unstable network. (Table-1) It was determined that 36.70% respondents spent 30-60 min/day on talking & 33.02% respondents spent almost the same duration on using smart phone apps. Of all students, 38.5% used mobile phone apps beyond 12AM with 11.9% using it beyond 2AM. (Table-1) It was seen that 74.31% respondents got tensed by low battery warning & 77.98% got annoyed when their mobile was not traceable. In total, 58.72% respondents could not leave their mobile even for 5 minutes. (Table-2) Of all respondents, 18.34% respondents used smart phone apps for exchanging medical media like patients’ reports for follow-up with fellow workers or senior residents/staff members. (Table-1) In total, 51.37% de-stressed themselves by playing games on smart phone. In aggregate, 55.01% users had health problems due to prolonged usage of mobile phones most common being ophthalmic like dryness of the eye or foreign body sensation in 15.59% residents. In the study it was found that 52.29% respondents did not memorized even one contact no. in their phone book. (Table-3)

Discussion- As evident in statistics 21.2 percent of mobile phone users in India used a smartphone ⁶. As examined in a study that there is an increasing dependence on mobile phones as users do not rely on individual network for communication. This dependence had made the presence of stable network an absolute essential. It is seen that almost 60 minutes of all respondents were spent on mobile phones either on talking or using apps. This had made their work very smooth & had reduced the time communication to peers or seniors. A survey conducted in 2014 showed that 16 % of mobile users in India watched videos on their phones and 11 percent used social media apps ⁶. In our study it was found that the most common use of apps was to exchange investigation reports like lab reports & scans or x-rays. These were stored in mobile phones or laptop & could be referred when hard copies could not be traced. This had caused the patient management easier by shortening the time to decide management protocol. As the accurate patient records could be exchanged with concerned personnel in short duration & actual treatment started or ongoing treatment could be modified. Besides the smart phone containing apps like Skype could be used for telemedicine. There is increased dependence on smart phones for storing contact information as the majority of the respondents could not memorize even a single contact detail, even they were not able to recall their own no. In an emergency situation such as loss of phone or contact details the respondents had no backup support.

Conclusion- While these smart phones based clinical apps have much potential in making life of residents easy, but, their increasing dependence had caused a breach in inter personal communication. It is seen that even doctors are socially disengaged & would opt to spend more time in the virtual world during their free times than in the real world. Increasing dependence on technology has resulted in a rise in anxiety levels & in times of technology failures can lead to a tense situation.

Table-1-Pattern of use of mobile phone	N	%
Distribution on the basis of type of SIM used		
GSM	56	51.37
CDMA	17	15.59
Dual	36	33.02
Distribution on the basis of time spent on calls		
<30 min	35	32.11
30-60min	40	36.7
60-120min	28	25.69

>2 hrs	6	5.5
Distribution on the basis of time spent on smart phone app		
<30 min	30	27.52
30-60min	48	44.04
60-120min	16	14.68
>2 hrs	15	13.76
Distribution on the basis of usage of smart phone at night time		
Upto 11PM	26	23.58
Upto 12 PM	41	37.61
12-2AM	29	26.6
Beyond 2AM	13	11.9
Distribution on the basis of type of information exchanged in social messenger services		
Conversation	43	36.44
Multimedia	41	37.61
Medical media	20	18.34

Table-2-Attitude towards use of smart phones		
Can't leave home without mobile	64	58.72
Can shut it for some time	20	18.35
First thing to check in morning	25	22.94
Anxious at low battery warning		
Yes	81	74.31
No	25	22.94
Can't say	3	2.75
Anxious when can't trace mobile		
Yes	85	77.98
No	20	18.35
Can't say	4	3.67
Anxious when can't trace network		
Yes	84	77.06
No	23	21.1
Can't say	2	1.83
Decreased stress by playing online games		
Yes	56	51.37
No	32	29.35
Can't say	21	19.26

Table-3-Impact of use of smart phones by medical residents		
Problems faced on using smart phones		
No problem	47	43.11
Eye problem	17	15.59
Musculoskeletal	36	33
Psychological problem	7	6.42
No. of contacts memorized		
None	57	52.29
1 to 3	31	28.44
3 to 6	17	15.59
More than 6	4	3.66

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