Smartphone Use among Young Doctors and Their Impact on Patients of Liaquat University Hospital Jamshoro

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Abstract

Objective: To observe the use of health-related application by house officers working in different wards of the Liaquat university of medical and health sciences hospital Hyderabad/jamshoro Sindh Pakistan.

Background: Now days many medical related applications which are supported by smart phones are commonly used by health professionals to keep themselves up-to-date or to take evidence based decision and to calculate the appropriate drug dose for patients etc. In Pakistan use of smart phone is also becoming common especially among youngsters/students. We attempted to explore how commonly junior doctors (house officers) are using smart phone during work in the clinical wards to improve their clinical learning and decision regarding patient’s health.

Methods: A specifically designed pre-tested & modified questionnaire was distributed by hand among the house officers working in various wards of the Liaquat University of Health Sciences Hospital jamshoro/Hyderabad. The questionnaire contained questions regarding the use of smart phone for their clinical learning in the ward and to keep themselves up to date by using various medical related applications. 2 questions were open response to explore participants’ views on apps that were desired or recommended and the characteristics of apps that were useful.

Results: Questionnaire was distributed among 300 house officers, over all response rate was 94 % (n=282/300). Among the respondent 65% (n=183/288) were male and 35.1% (n=99/288) were female. 59.7% (n=169/283) of house officers owned a Smartphone, 8.5%( 24/282) did not use any medical related application. 31 % of house officers (90/283) owned 1–5 medical related applications, with very few owning 10 or more.30.8% (n=87/282) participants use applications for education-learning 25.5%( n=72/282) use the applications for clinical learning in the wards. Both male and female house officers showed similar trends of app usage of several times a day. Participants used disease diagnosis/management and drug reference apps. Most of the house officers prefer mobile application as they are easy to use, quick to access, reliable, and fast. Applications recommended by most of the house officers were as follow Dorland medical dictionary (21/288), oxford medical dictionary (31/288), pharm guide Pakistan (12/288).

Keywords: Smartphone’s; Smartphone, house officers, Liaquat University of medical and health sciences. Survey

Introduction

Smartphone’s have proved to be a revolutionary step in developmental sciences. It has made an impact on each and every field of our society. Day by day popularity of smart phones is on the rise. the launch of iphone by apple in June 2007 can be said as the birth of smart phones, further followed by rivals making smart phones easy cheap and accessible to all.[1]

Smartphone’s has made a great impact in the field of medical and health sciences, it can be judged from the fact that apple launched a separate category for medical apps in its app store in 2008.(4) a research conducted in usa shows 72% of physicians use smart phones, in another study 85% doctors of accredit ion council for general medical education use smart phones.[2]
Now it is easy for doctors to carry big, long and heavy text books just in their palm with the help of smart phones. There are numerous apps which if used can lead to easy, quick and appropriate diagnosis in a more convenient manner. There are apps where we store clinical data, reference information, perform complex calculations, access data from internet, audio and video content, enter data for research, take proper history, perform accurate clinical examination, interpret results of investigations, drug formularies trade names dosage, etc. [3]

Looking at the importance and significance of smart phones many hospitals in usa are distributing smart phones to their duty doctors and supporting medical staff as in university of pittsburgh distributed smart phones to their emergency medicine unit [4]

Surgeons take record of their surgical procedures by taking snaps of their patients before and after surgery and easily present the case in ward discussions or clinic-pathological-conferences. Orthopedic surgeons keep a vast record of their radiological tests on their smart phones. Talking about radiology tele-radiology is nowadays a very popular term and many apps supporting radiological diagnosis are being found.[1]

Looking at all the developments the need to conduct a study to know the uptake and application of smart phones in our society and our focus being liaquat university hospital, consultants, postgraduate trainees and internee. And to let the doctors of our society know the significance and uses of smart phones so they should also adapt to the new developments and give more efficacious results.

No survey has ever been done in Pakistan on the usage of health related smart phone application before. We therefore conducted this survey to assess the usage of smart phone among the house officer working in various wards of our hospital.

Methodology:

A Questionnaire, previously used for the same type of study,[5] adapted to the condition of Pakistan, was distributed by hand to house officers (newly qualified doctors analogous to American ‘Intern’ position), working in different wards (internal medicine, surgery, gynaecology) of teaching hospital of Liaquat university of medical and health sciences jamshoro/Hyderabad Sindh Pakistan. The questionnaire was constructed by the lead researcher and was reviewed by an expert panel for content validity and reliability. Questions were derived from previous literature and the researcher’s personal experience and that of other informants. The questionnaire was pilot tested within one hospital and altered accordingly. The questionnaire collected data on the following areas: the numbers who owned a Smartphone; type of Smartphone; the number of medical apps owned and which were most useful; the medical environment in which the Smartphone was used; and how often apps were actually referred to during working/educational hours. An open text entry box allowed respondents to discuss any further issues arising from medical related Smartphone use. All numerical data were entered and analyzed using the Statistical Package for Social Sciences (SPSS version17), initial descriptive statistics were undertaken and inferential analyses were performed using the non-parametric C hi square test and Fisher Exact tests as appropriate.

Results:

Characteristics of the participants:

Questionnaire was distributed among 300 house officers, over all response rate was 94 %(n=288/300). Among the respondent 56.3 %(n=162/288) were male and 43.8 %(n=126/288) were female. 51.0% (147/288) house officer were from Medicine wards, 30.2 % (87/288) from surgery wards and 18.8% (54/288) were from Gynae/Obs wards respectively.

Smartphone owner:

59.4% (171/288) owned a smart phone while 40.6% (117/288) did not own a smart phone.

Use of Applications:

Among the participants who owned Smartphone 56.1 %(96/171) owned 1–5 health related applications, 8.8% (15/171) owned 11–15 applications, 7.0%(12/171) owned 6–10 applications, 5.3% (9/171) 16–20 applications, 5.3% (9/171) 21–25 applications, 3.5% (6/171) 26–30 applications, 1.8% (3/171) owned 31+ applications respectively. Whereas 12.3% (21/171) despite having smart phone did not own any health related applications.

Frequency of mobile application use:

24.0% (69/288) of the participants use mobile health application several times a day, 10.4% (30/288) once or twice a day, 8.3% (24/288) 2–3 times a week, 6.3% (18/288) rarely used, 3.1% (9/288) once a week respectively.

Minutes spent on application use:
11.5 % (33/288) of the participants spend 1-10 minutes, 12.5% (36/288) 11-20 minutes, 11.5% (33/288) 21-30 minutes, 6.3% (18/288) 31-40 minutes, 3.15% (9/288) 15-60 minutes, 7.3% (21/288) more than 60 minutes/day.

Discussion:

Smartphone's is one of the most common things being discussed among the educated and technology oriented societies of the whole world, smart phones have become so cheap and easily accessible that it has become very convenient for users to buy and upgrade their previous phones. Along with being cheap it is giving so many features that everyone gets attracted towards it. In an international online survey it was indicated that in 2012 around 50% of doctors will be using smart phones [6]. in another more popular survey conducted by epocrates ,47% of epocrates users use smartphones as their mode of gaining and accessing medical knowledge[7] . In terms of medical usage smartphones are gaining popularity , as in our survey we came to know that a good no of young doctors more than 50% use smart phones and out of those only a mere of 12.3% of doctors don’t use any medical app rest all use few medical apps. This study indicated that smartphone have really become popular in our part of the world also.

There is the hype a Of new and new medical apps being launched everyday and its demand is giving great competition to rival companies , apple, Google and Microsoft are the most profiting companies among all. The no of medical apps being used by the doctors vary from less than 5 to more than 30 apps per user. Out of these mostly are free apps but others vary from 0.99$ to 4.99$. there have been few survey about the most popular medical apps or the most widely used medical apps i.e.-e epocrates, mindscape, skyscape, up-to-date , medicale etc[8]. There are some new apps which help patients even in getting medical advice and assessing their own well being like BP monitoring, ECG etc[9]. In one of the most recent advances a new system known as eCAALYX (Enhanced Complete Ambient Assisted Living Experiment, 2009-2012), an EU-funded project for older people with multiple chronic conditions. The eCAALYX Android Smartphone app receives input from a BAN (a patient-wearable smart garment with wireless health sensors) and the GPS (Global Positioning System) location sensor in the Smartphone, and communicates over the Internet with a remote server accessible by healthcare professionals who are in charge of the remote monitoring and management of the older patient with multiple chronic conditions[10]. These along with many other apps coming in the market clearly indicate the usefulness of smart phones for patients also.

Apart from the use and advantages of smart phones there are few critical aspects also to be considered the most important among them is the reliability of these apps , the data , information and details they provide are they really authentic , which source are they using for this info , is it up-to-date with latest advances and all. Another concern is that doctors are relying more and more on these apps rather more than practical approach and give their whole focus and attention on these apps so is this diverting the doctor from the more true and holistic approach or not[11,12].

Overall from different studies and relating our own results we can say that most of doctors are adopting the usage of smart phones in their practical approach and it is a good step as it will increase efficiency and result in benefit of the patient.

References

7. epocrates (2013) EPOCRATES 2013 MOBILE TRENDS REPORT.
8. glenn B (June 2013) [Physicians' top 5 most-used medical apps for smartphones and tablets. internetmedicine.com.
