ORIGINAL ARTICLE

Usage of Smart Phones by Medical Students at A Medical College in Pakistan

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ABSTRACT
Introduction: Smart phones have become cheap and accessible to almost everyone in Pakistan. They are particularly quite common among students including medical students. However, question is still there whether medical students use these smart phones for study purpose also or it is just a way of communication.
Objective: To determine the use of smart phones by 2nd year medical students of our college and to determine the usage of these phones for learning purposes.
Material and Methods: This cross-sectional study was conducted at Avicenna Medical College. After the end of the lecture, all 2nd year students were given a proforma. The proforma determined the demographic details of the participants and the usage of devices, medical applications in the smart phones and their usage.
Results: The mean age of the participants in this study was 20.02 ± 1.44 years. There were 69 females (72.6%) and 26 males (27.3%) in the study. Most of the participants (83.6%) owned a smart phone. All of the study participants told to use smart phones for sms, emails, internet and social media. Eighty five participants of 88 having smart phone (96.5%) were using it for educational purposes. When asked in detail, only 45 participants (51.1%) were having e-books in their smart phones. Sixty seven participants (70.5%) were having more than one medical application installed. Final question asked was the reason for not using mobile smart phone for educational and study purposes. The most commonly chosen option was paid applications and paid articles by 29 and 21 participants (30.5% and 22.1%) respectively. Also 6 participants (6.3%) labelled internet problems as cause for not using mobile smart phones for study purposes.
Conclusion: It is concluded that most ofmedical students own smart phones, however their usage for learning and educational purposes is limited. So it is suggested that teachers must guide their students in this regard as usage of smart phones can be of great help in learning if properly used.

Keywords: Smart phones; Medical students; Education; e-learning

INTRODUCTION
Mobile phones were made available in Pakistan in late 20th century. However, their market boosted up in early 21st century when it was made available to the general public because of decreasing prices. In this era of technology, smart phones were introduced as a newer form of mobile phones which had a lot variety of applications and multi-dimensions uses. Smart phones were first introduced in Japan and later on were available for whole of the world including Pakistan [1, 2].

Like all other fields, a lot of smart phone applications are being made and used for health care professionals. Also usage of mobile phones by medical students could be of enormous help to them for improving their advanced knowledge. Also a large number of studies on different topics are being added in the literature on daily basis, which can be easily accessed by medical students through smart phones. The vast usage of these phones has really made life of medical students and heath care workers easy as whole of the literature is just a click away now [3-5].

In a study by Nestel et al, it was found that medical students use mobile phones for their educational benefits. Particularly smart phones have made their access to educational resources very easy and quick [6]. However another study had shown that medical students waste a lot of time on their smart phones. Authors had found that

medical students spend a mean time of 28.3 minutes/day for talking and 51.9 minutes for listening to the music on phones. They also found that medical students send 18.8 text messages daily through their phones [7].

There are some studies available on Pakistani medical students regarding mobile phone usage; however none of them has focused on their usage for learning purposes. Therefore this study was planned with the objective to look for usage of smart phones by medical students and also their usage for learning purposes.

MATERIAL AND METHODS

This cross-sectional study was conducted at Avicenna Medical College. All the students of 2nd year MBBS were asked to fill a self-administered proforma after a lecture in lecture hall. Informed consent for inclusion in the study was obtained from all the participants. The questionnaire consisted of demographic details of the participants, type of device being used, reasons of not owing smart phone, educational usage of smart phones, use of mobile applications and reasons for not using medical applications on smart phones. All the data was analyzed by SPSS by using simple descriptive statistics.

RESULTS

A total of 95 students participated in the study. The mean age of the participants was calculated as 20.02 ± 1.44 years. There were 69 females (72.6%) and 26 males (27.3%) in the study. Most of the participants (83.6%) owned a smart phone. In this study, it was found that 92 participants (96.8%) had laptop and a similar number owned both laptop and smart phones. When asked for not owing a smart phone, most common reason was found to be high cost followed by not preference of owing it. Most of the participants owed a smart phone of Samsung make (57.9%), followed by Apple (31.8%) and other companies (10.2%). All of the study participants told to use smart phones for sms, emails, internet and social media. Eighty five participants of 88 having smart phone (96.5%) were using it for educational purposes. When asked in detail, only 45 participants (51.1%) were having e-books in their smart phones. All the details of the participants regarding use of mobile phones for educational purposes are summarized in table 1.

Also 61 participants (64.2%) were having at least one medical application installed in their smart phones. Sixty seven participants (70.5%) were having more than one medical application installed. Final question asked was the reason for not using mobile smart phone for educational and study purposes. The most commonly chosen option was paid applications (30.5%). All the answers are summarized in table 2.

DISCUSSION

The aim of this study was to assess the use of smart mobiles by 2nd year medical students and to look into the factors which lead to less usage of smart phones for learning.It was found in this study that most of the participants owned a smart phone and a laptop. As our medical college is a private sector college, so most of the students have financially strong background and have smart phones of high prices and of recent models available in Pakistan. A similar study found that most of the medical students in UK, Saudi Arabia and South Korea had smart phones and use it for educational purposes [8-10].

It was also found that unexpectedly only 47.3% students had e-books into their mobiles and almost a similar percentage were using mobile phones for regular learning. However a fair percentage (78%) were using smart phone for taking pictures for learning purposes in this study. In a similar study conducted in Kenya, 59% of medical students told having e-books in their smart phone. In that study, also 60% of students told using images for learning[11].

Yogesh et al conducted a case control trial on medical students and found that usage of mobile phone for >2 hours/day is significantly associated with sleep deprivations. They also found that it significantly affects the cognitive and psychomotor abilities of the students [4]. Shrivastava et al tried to found the change in circadian rhythm of Melatonin level in medical students comparing mobile usage with those using it <2 hours/day. They found a negative correlation between time of usage of mobile phones and Melatonin levels [12].

Ehteshami et al found that most of the medical students have adequate knowledge of smart phones and healthcare related applications. However they use these applications minimally for knowledge purposes and treatments strategies [3]. In another study, it was found that usage of smart phones for sports medicine students was associated with greater increase in test performance an understanding than traditional methods of learning [13]. The results of this study

showed that almost 50% of the medical students use medical applications for study purpose.

There were few limitations in this study that it didn't look into the factors of less usage of medical applications by students. Authors also suggest dealing with the factors like paid applications for medical students and paid articles. Teachers must guide their students in this regard as usage of smart phones can be of great help in learning if properly used. Also authors suggest some teaching sessions to guide the students regarding this important tool of e-learning and made their access to e-books and research articles easy and feasible.

Table 1: Details of educational usage of smart phones for educational purposes

Educational use	Number of participants (%)
Regular study	56 (58.9%)
Reading books in mobile	45 (47.3%)
Revising for examination	36 (37.8%)
Taking notes on smart phone	40 (42.1%)
Taking images for study purposes	78 (82.1%)
Accessing research journals	11 (11.5%)

Table 2: Reasons for not using mobile phones for educational purposes

Reasons	Number of participants (%)
Paid applications	29 (30.5%)
Paid articles	21 (22.1%)
Shortage of time	35 (36.8%)
Internet problem	6 (6.3%)
No reason	4 (4.2%)

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