AN ANALYTICAL STUDY ON IMPACT OF MOBILE MEDICAL APPLICATION ON MEDICAL STUDENTS AND PATIENTS WITH REFERENCE TO DOCTOC APPLICATION

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Abstract: Mobile devices and apps provide many benefits for health care professionals, perhaps most significantly increased access to point-of-care tools, which has been shown to support better clinical decision-making and improved patient outcomes. Hence, this research is an attempt to study the impact of smartphone, especially medical applications with reference to ' Doctoc' on efficiency of medical students as well as on patients. This study also aimed to determine the reliability and usage of medical apps in India. It is found that majority of the patients are found to be satisfied with the Doctoc application as they feel that it saves their time as well as it helps in increasing patient' s care.

Keywords: Medical application, Medical students, Patient satisfaction, etc.

1.1 Introduction:

The use of mobile devices by health care professionals (HCPs) has transformed many aspects of clinical practice. Mobile devices have become commonplace in health care settings, leading to rapid growth in the development of medical software applications (apps) for these platforms. Numerous apps are now available to assist HCPs with many important tasks, such as: information and time management; health record maintenance and access; communications and consulting; reference and information gathering; patient management and monitoring; clinical decision-making; and medical education and training.

Medical applications (apps) have been suggested to support clinical decision-making, improve communication between hospital staff, and improve patient management. Studies have indicated frequent use of apps as reference and information management tools in clinical practice, with a trend toward increasing app use amongst medical practitioners with less training. Resident physicians have reported increasing usage of apps in their clinical

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practice, most commonly drug guides, medical calculators, coding and billing apps, and pregnancy wheels. While previous literature has examined the utility of apps for physicians in various medical specialties, less is known about the popularity, reliability, and usage of medical apps by medical students.

Mobile devices and apps provide many benefits for HCPs, perhaps most significantly increased access to point-of-care tools, which has been shown to support better clinical decision-making and improved patient outcomes. However, some HCPs remain reluctant to adopt their use. Despite the benefits they offer, better standards and validation practices regarding mobile medical apps need to be established to ensure the proper use and integration of these increasingly sophisticated tools into medical practice. These measures will raise the barrier for entry into the medical app market, increasing the quality and safety of the apps currently available for use by HCPs.

1.2 Statement of Problem:

While the majority of medical students own smartphones, use medical apps at least once a day, and agree that having a smartphone has a positive effect on their education, it has been suggested that medical students have conflicting negative perceptions on smartphone utilization in the hospital setting. One of the most common recurring negative theme that surfaced in a survey of medical students in the United Kingdom was the fear of appearing disinterested in patient care while using mobile apps. Hence, this research is carried out to study the impact of smartphone, especially medical applications with reference to ' Doctoc' on efficiency of medical students as well as on patients. This study aimed to determine the reliability and usage of medical apps in India.

2. Literature Review:

According to Quant C., Altieri L., Torres J and Craft N. (2016), mobile medical software applications (apps) are used for clinical decision-making at the point of care. Objectives of their study were to determine (1) the usage, reliability, and popularity of mobile medical apps and (2) medical students' perceptions of app usage effect on the quality of patient-provider interaction in healthcare settings. During the research An anonymous web-based survey was distributed to medical students. Frequency of use, type of app used, and perceptions of

reliability were assessed via univariate analysis. Results of their research show that seven hundred thirty-one medical students responded, equating to a response rate of 29%. The majority (90%) of participants thought that medical apps enhance clinical knowledge, and 61% said that medical apps are as reliable as textbooks. While students thought that medical apps save time, improve the care of their patients, and improve diagnostic accuracy, 53% of participants believed that mobile device use in front of colleagues and patients makes one appear less competent. The researchers concluded that while medical students believe in the utility and reliability of medical apps, they were hesitant to use them out of fear of appearing less engaged. Higher levels of training correlated with a greater degree of comfort when using medical apps in front of patients.

According to Malik, Shafaq & Bibi, Nargis & Khan, Sehrish & Sultana, Razia & Rauf, Sadaf. (2016), life is becoming too busy to get medical appointments in person and to maintain a proper health care. The main idea of this work is to provide ease and comfort to patients while taking appointment from doctors and it also resolves the problems that the patients has to face while making an appointment. The android application Doctoc acts as a client whereas the database containing the doctor's details, patient's details and appointment details is maintained by a website that acts as a server.

Thorat, Miss & Kulkarni, Dr. (2019) in their paper commented that in advanced mobile communications and portable computation devices are now combined in handheld devices called " smart mobile phones, IPADs, Tablet PC" , which are also capable of running third-party software. The number of smart mobile phones users is growing rapidly, including among healthcare professionals. The purpose of this study was to classify smart mobile phones - based healthcare technologies as discussed in academic literature according to their functionalities, services and summarize articles in each category. Many medical applications for smart mobile phones have been developed and widely used by health professionals, doctors, consultant and patients. The use of smart phones is getting more attention in healthcare and medical services day by day. Medical service provider applications make smart mobile phones useful tools in the practice of evidence-based medicine at the point of care, in addition to their use in mobile clinical communication with a correct references.

Also, smart mobile phones can play a very important role in patient education, disease self-management, and remote monitoring of patients.

3.1 Objective of the research:

Objectives of this research are as follows:

1. To understand the reliability and popularity of mobile medical applications among patients.

2. To analyze the impact of mobile medical application on quality of treatment by medical students.

3.2 Research Design:

In this research, descriptive research design technique has been used to describe the factors that support the popularity of mobile medical applications among patients and also to describe the impact of medical application on treatment quality of medical students.

3.3 Data Collection:

For the purpose of this research, primary data has been collected through structured questionnaire from 100 medical students and 100 patients who are using ' DOCTOC' application. Whereas, secondary data has been collected from official website of hospital, magazines, literatures and journals.

3.4 Sampling Technique:

In the present research, convenient sampling technique has been used to collect the data from medical students and patients who are using Doctoc application.

3.5 Sample Size:

The data has been collected through structured questionnaire from 100 medical students and 100 patients who are using ' DOCTOC' application.

4. Data Analysis:

For the purpose of this research, primary data has been collected through structured questionnaire from 100 medical students and 100 patients who are using ' DOCTOC'

application with an objective to study the reliability and popularity of mobile medical applications among patients and to analyze the impact of mobile medical application on quality of treatment by medical students.
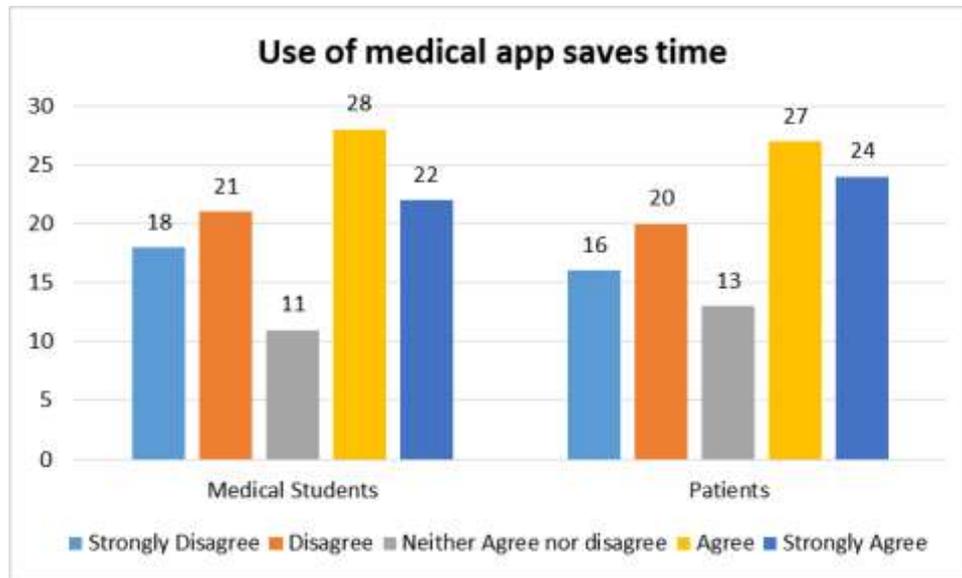

Fig. 1

(Source: Primary Data)

During the research, it is found that majority i.e. 28% of medical students and 27% of patients agree that the use of medical application saves their time, which is supported by 22% of medical students and 24% of patients who strongly agree to this. 11% of medical students and 13% of patients neither agree nor disagree to this. Whereas, 21% of medical students and 20% of patients disagree that medical applications saves their time and remaining 18% medical students and 16% patients strongly disagree to this.
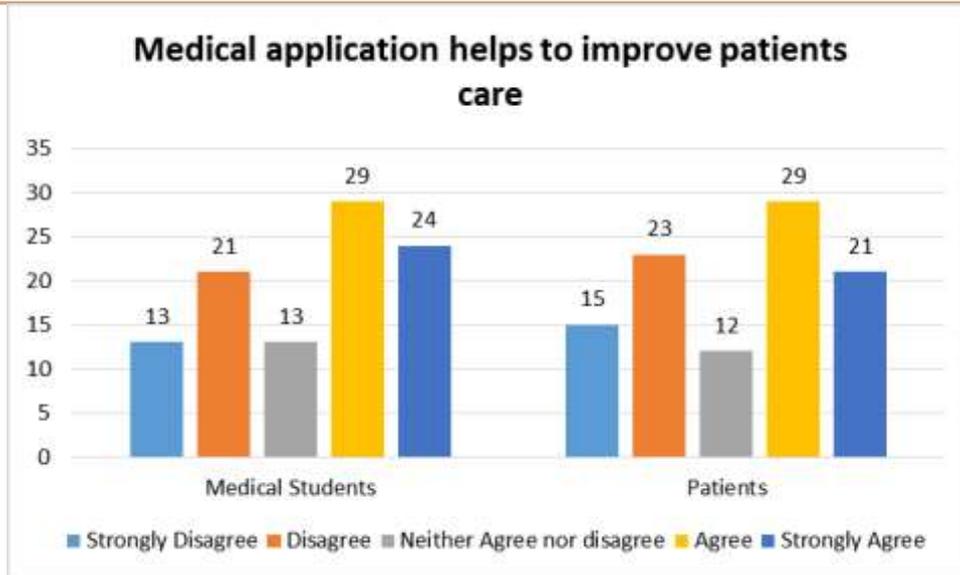
Fig. 2

(Source: Primary Data)

From the above figure 2, it is found that majority i.e. 29% of medical students and 29% of patients agree that the use of medical application helps to improve patient's care, which is supported by 24% of medical students and 21% of patients who strongly agree to this. 13% of medical students and 12% of patients neither agree nor disagree to this. Whereas, 21% of medical students and 23% of patients disagree that medical application helps to improve patient's care and remaining 13% medical students and 15% patients strongly disagree to this.
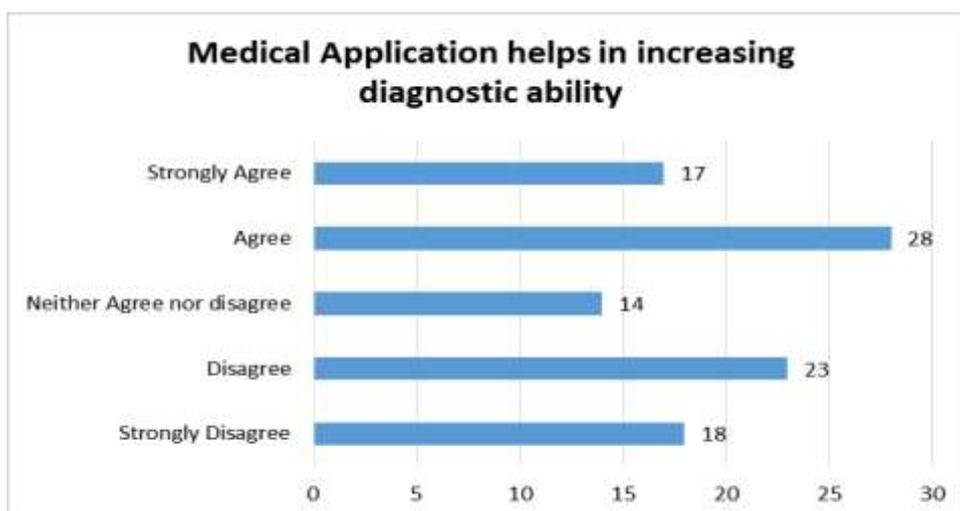

Fig. 3

(Source: Primary Data)

From the above figure 3, it is found that majority i.e. 28% of medical students agree that the use of medical application helps in increasing their diagnostic ability, which is supported by 17% of medical students who strongly agree to this. 14% of medical students neither agree nor disagree to this. Whereas, 23% of medical students disagree that medical application helps in increasing their diagnostic ability and remaining 18% medical students strongly disagree to this.

5. Conclusions:

Doctoc apps have been shown to augment patient care, save time, and increase diagnostic accuracy. While medical students regard medical apps favorably, they also hesitate to use apps during patient encounters and with peers, due to a fear of being perceived as incompetent. However, majority of the patients are found to be satisfied with the application as they feel that it saves their time as well as it helps in increasing patient' s care.

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