



# Utilization of smart phones related medical applications among medical students at King Abdulaziz University, Jeddah: A cross-sectional study

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## KEYWORDS

Medical Apps;  
Saudi Arabia;  
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## Summary

**Introduction:** The present study explored the utility, attitude, and trends regarding Smartphone related Medical Applications (Apps) among medical students of King Abdulaziz University (KAU) Jeddah, Saudi Arabia (SA) and their perceptions of the impact of Medical Apps in their training activities.

**Subjects and methods:** This survey was conducted at the Faculty of Medicine, Jeddah, and Rabigh campuses, KAU, Jeddah, SA. All participants were medical students of 2nd to 6th year. The data was collected by using an anonymous questionnaire regarding the perception of medical students about Medical Apps on the smart devices and the purpose of installation of the Apps. Additionally examined was the use of different Medical Apps by the students to investigate the impact of Medical Apps on the clinical training/practice. Data was analyzed on SPSS 21.

**Results:** The opinion of 330/460 medical students from all academic years was included in the study with a response rate of 72%. There were 170 (51.5%) males and 160 (48.5%) females with a mean age of  $21.26 \pm 1.86$  years. Almost all participating students 320 (97%) were well aware of Medical Apps for smart devices and 89.1% had installed different applications on their smart devices. The main usage

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was for either revision of courses (62.4%) or for looking up of medical information (67.3%), followed by preparing for a presentation (34.5%) and getting the medical news (32.1%). Regarding the impact of Medical Apps, most of the students considered these helpful in clinical decision-making, assisting in differential diagnosis, allowing faster access to Evidence-Based Medical practice, saving time and others. The practical use of these Apps was found to be minimal in medical students. Around 73% were occasional users of Medical Apps, and only 27% were using Medical Apps at least once a day.

*Conclusion:* The regular use of Medical Apps on mobile devices is not common among medical students of KAU.

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## Introduction

Textbooks have traditionally been the major source of information for medical students. However, with advances in information technology, the number of students using the electronic resources has increased considerably. Advances in technology have made it possible for people to more easily acquire any information when required [1–5].

Mobile phones took a revolutionary turn with the launching of the smartphone in 1994 [5]. Since then mobiles have become an essential companion for our day-to-day activities [6].

The role of mobiles in health care professions is becoming very strong and effective by providing tailor made access and provision of information to valuable advice in almost each specialty [7]. This has produced a very positive effect on the decision-making in difficult situations, resulting in an obvious reduction in a number of medical errors because of better understanding among health care professionals resulting in improved and effective patient care [8].

According to an estimate, more than 13,000 mobile Apps relating to health are available from different Apps stores [1]. These Apps are quite helpful in the training of health care workers and provide an easy approach to multiple activities such as appointment reminders, reference ranges, physician or hospital locator, calorie counter, body surface area calculator and many others. This provides tremendous help in day-to-day decisions pertaining to diagnosis, treatment and in the healing process [9].

Medical Apps, which can be easily downloaded onto mobiles, have an increased popularity among medical students and young clinicians [10].

According to a recent survey in England, 84% of medical students were of the opinion that smartphones and related Medical Apps are quite helpful in their medical education [9].

Based on the present trends, one can speculate that use of smartphone Apps would groom medical students for their future professional clinical life. For this reason, a number of medical institutes have started using this new technology for teaching purposes to provide an effective guide to the budding clinicians for their upcoming professional demands [11].

A literature review indicated that there is a lack of research regarding the use of smartphones Medical Apps among medical students and their perception of the impact of Medical Apps on their learning in the Kingdom of Saudi Arabia. Therefore, the objectives in planning this study were to explore the utility, attitude, and trend among medical students of King Abdulaziz University (KAU) Jeddah and their perceptions on the impact of Medical Apps in their training activities.

## Subjects and methods

This cross-sectional, survey study was conducted at the Faculty of Medicine, Jeddah & Rabigh campus of KAU, Jeddah, Saudi Arabia. The Wi-Fi internet facility is available on all the campuses of the university and hospital area for students and faculty. We collected the data using an anonymous questionnaire that was constructed from previously published studies [8,12]. The questionnaire was distributed to 460 second year to sixth-year medical students randomly selected from both campuses.

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