

Impact of mobile phones on information seeking behavior of medical students of Dow University of Health Sciences. Karachi, Pakistan

By Umm-e-Habiba

Abstract:

In the digital era, the accessibility and use of information have evolved significantly, particularly among medical students at Dow University of Health Sciences (DUHS). This study investigates the impact of smartphones on the information-seeking behavior of medical students, focusing on their awareness, usage patterns, and the challenges they encounter. Data was collected from 128 MBBS students through surveys, revealing that all participants owned smartphones and frequently utilized them for academic purposes, such as accessing online lectures, browsing the internet, and downloading medical applications. Key findings indicate that YouTube, Google, and ChatGPT are the most popular platforms for information retrieval. Despite the advantages offered by smartphones, students reported facing issues such as slow internet, social media distractions, and technical difficulties. The study underscores the critical role of smartphones in enhancing educational experiences while highlighting the need for improved support systems to address the challenges faced by medical students in utilizing mobile technology effectively.

Introduction:

Information is the basic need of every human being. People need different kinds of information as per their need. Information can be gathered to different means as today we are living in the digital era and technology has made a revolutionary change in every field of life so the means through which we gather information is also modified. Now the ICT devices are widely used to gather information. Earlier these ICT devices were known as telecommunication devices that were only used to communicate with people at a distance; we only could make calls to others and receive calls from others. But the continued development and advancement in telecommunication technology introduce many other features such as texting, searching, recording, storing, editing and many other advanced features. Mobile phones encompass a wide array of roles in education such as learning tools, communication and information. Here are some important features of ICT that help in updating education standards: information gateways, internet service and tools, distance learning, presentation software, and learning tools. Mobile phones made it easy to see information of any subject or any topic in a short interval of time. The mobile phones, smartphone computers and laptops are used to getting information. But among these devices smartphones are widely used by students, researchers and others to find their required information to fulfill their information needs. Smartphones are really helpful in our daily life. We can perform many tasks just by clicking on the screen such as digital banking or doing groceries shopping of any kind etc. It means that a smartphone gives us everything we need just by touch on screen.

Objectives:

1. To find out the level of awareness and use of mobile phones for information seeking by medical students.
2. To find out how mobile phones are useful in gathering information for study, work and research.
3. To discover the medical sites used by medical students for their academic needs.

4. To identify the problems faced by medical students while using mobile phones for study.

Scope and Limitations:

This study leads us to identify the impact of smartphones on the information seeking behavior of medical students of Dow University of Health sciences. The study also helps us in exploring the different aspects of use of mobile phones.

The MBBS students of DUHS (DMC campus) are the targeted audience of this study. The students in FCPS or FRCS and post graduates are not eligible for this study.

Literature Review:

Victor (2015) studied the impact of smartphones tablets on the information seeking behavior of medical students and staff of Niger Delta University Bayelsa state Nigeria. It is found that majority of students and staff use smartphones and tablets in which most of the students use for the purpose of downloading apps while few of them downloading e-books, browse internet, social networking, taking notes, classes or labs, whereas the majority of staff use their devices to access online medical e-journals at the same time they also use their phones and tablets for browse internet, download medical apps & download e-books. It is also ascertained that the “Gray’s Anatomy” is the most common app downloaded by majority of students and staff. The smartphone and tablets made positive impact on students as well as on staff. It is studied that students and staff have different opinions on using smartphones and tablets but majority of respondents indicates easy and fast internet access. The problems encountered in using smartphones and tablets and found that majority of respondents have lack of technical experts on repairs when faulty within campus.

Boruff and Storie (2014) conducted a survey of Canadian medical faculties that how medical students, residents and faculty use smartphones and other mobile devices to discover information. The data was collected through an electronic survey form which was distributed by librarian to students, residents and faculty at four Canadian universities via their official departmental e-mail address. The results of the study showed that majority of respondents use smartphones and tablets in which most of the students are third- and fourth-year students and medical residents used their mobile devices more often for a different kind of activities related to their study and research.

Vafa and Chico (2013) carried out a study on need assessment for mobile technology use in medical education. The data was collected by survey method through a questionnaire from 1000 first year medical students. The study found that majority of students own a smartphone or a similar mobile device which they mostly use for their information needs primarily to download educational course materials, listen to their course lectures, and access medical resource applications.

Olasoji and Bolarinde (2020) study the use of medically related smartphone apps for health care information among health care professionals. The data was gathered through questionnaire from 150 health care professionals and then data summarized by using descriptive statics of percentage and frequency distribution. The result of the study reveals that the majority of respondents owns smartphones, android and tables phones and they are aware that smartphones can help in patient’s care also they can access their medically related apps by using their smartphones.

Singh and others (2023) study the information seeking through android smartphones mobile technology by legal practitioners and judicial library services.

Chepte and others (2023) conducted a research with title Study of electronic devices usage in learning anatomy among first MBBS medical students in a tertiary care center in western Maharashtra, India. Online forms containing Questionnaire with the help of google form software were sent to total 196 students to collect data. The results from collected data reveals that majority of students use electronic devices to learn anatomy in which mobile phones or smartphones are more common devices used by students. Most of the students reported time duration of use of their devices is 1-2 hours daily.

Wang and others (2022) conducted a study on the digital divide and seeking health information on smartphones in Asia: survey study of ten countries. A survey method to use to collect data from 10 Asian countries and ran multilevel regression model to asses the effect of sociodemographic factors, technological factors, and country-level disparities on using smartphones to seek health information. The results of the study show that majority of respondents use smartphones to seek health information. technology innovativeness and frequency of smartphone use were important factors of health information seeking, whereas the effect of online information quality was marginal.

Verma and sheth (2018) conducted a research on use of mobile devices for health care information by post graduate physiotherapy students. A cross sectional survey study was conducted for which a questionnaire was designed to collect data from 70 physiotherapy students of various physiotherapy colleges of Gujrat. The results show that majority of students use mobile devices to access medical resources to search medical journals to find information about physiotherapy techniques and google scholar as a source of medical information.

Alfawareh and Jusoh (2014) conducted a study on smartphones usage among university students: Najran university case.

Data Analysis

Table 1: Use of Smart phone

| Options | No. of Respondents | Percentage |
|---------|--------------------|------------|
| Yes | 128 | 100% |
| No | 0 | 0% |
| Total | 128 | |

Table no. 1 shows that the 128(100 %) the respondents own mobile phone or smart phone.

Table 2: Frequency of Use

| Options | No. Of Respondents | Percentage |
|----------|--------------------|------------|
| Never | 0 | 0% |
| Rarely | 1 | 0.78% |
| Sometime | 12 | 9.3% |
| Often | 61 | 47.65% |
| Always | 54 | 42.18% |

| | | |
|-------|-----|--------|
| Total | 128 | 99.91% |
|-------|-----|--------|

The results of table no. 2 revealed that 61(47.65 %) respondents out of 128 often use their smart phone or mobile phone for the purpose of information seeking while 54(42.18 %) respondents always consider their mobile phone or smart phone as priority to fulfill their information needs whereas 12(9.375 %) respondents use sometime their mobile phones or smart phones, 1(0.78 %) respondent rarely and 0(0 %) respondents never use their smart phone or mobile phone for the purpose of information seeking.

Table 3: Use of other medical sources

| Options | No. of Respondents | Percentage% |
|---------|--------------------|-------------|
| Yes | 128 | 100% |
| No | 0 | 0% |
| Total | 128 | 100% |

Table no. 3 disclose that all 128 (100 %) respondents avail different medical sources and to fulfill their information need.

Table 4: kinds of information sources

| Options | No. of Respondents | Percentage% |
|------------------------------------|--------------------|-------------|
| Downloading e-Textbooks | 85 | 66.40% |
| Access e-journals | 58 | 45.31% |
| Browsing the internet | 110 | 85.93% |
| Make presentations and assignments | 47 | 36.71% |
| Online lectures | 116 | 90.62% |
| Surgical videos | 27 | 21.09% |
| Attend class on LMS | 7 | 5.46% |
| Downloading medical apps | 90 | 70.31% |
| Social networking | 72 | 56.25% |

Table no. 4 reveals that majority of students 116(90.625 %) use their mobile phone or smart phone to for online lectures followed by the browsing internet 110(85.93 %), downloading medical apps 90(70.31 %), downloading e-textbook 85(66.40 %), social networking 72(56.25 %) and access e- journals 58(45.31 %).

Table 5: Common used medical sites

| Options | No. of Respondents | Percentage% |
|---------|--------------------|-------------|
| Google | 117 | 91.40% |
| YouTube | 120 | 93.75% |

| | | |
|---|----|--------|
| ChatGPT | 93 | 72.65% |
| Google Scholar | 35 | 27.34% |
| HEC Digital library | 9 | 7.03% |
| PubMed | 80 | 62.5% |
| UpToDate | 11 | 8.5% |
| Medscape/eMedicine | 33 | 25.78% |
| Lexicomp | 1 | 0.78% |
| Epocrates | 2 | 1.56% |
| Medical Calculator | 4 | 3.125% |
| DynaMed | 1 | 0.78% |
| PEPID | 2 | 1.56% |
| Anesthesiology pocket card | 0 | 0% |
| ACG pocket guide tool/ ECG rhythms | 1 | 0.78% |
| PocketDerm | 3 | 2.34% |
| Micromedex Drug Info | 0 | 0% |
| 3D Nervous system: www.3D4medical.com | 8 | 6.25% |
| MedAbbrevs/ Psych Drugs/ Psych Terms | 4 | 3.12% |
| Pearson's Nurses Drug Guide | 1 | 0.78% |
| Speed Muscles MD/ Speed Bones MD | 0 | 0% |
| Pocket Lab Value/ Normal Lab Value/ Lab Gear Value | 1 | 0.78% |
| Gray's Anatomy | 56 | 43.75% |
| Students BMJ | 6 | 4.68% |
| Skyscape Med Resources | 7 | 5.46% |

| | | |
|---------|---|-------|
| Osmosis | 2 | 1.56% |
|---------|---|-------|

Table no.5 indicates the apps used by medical students to fulfill their information need in which majority of respondents 120(93.75 %) use YouTube followed by Google 117(91.10 %), ChatGPT 93(72.65 %), PubMed 80(62.5 %), and Gray's anatomy 56(43.75 %).

Table 6: Problems in the use of mobile phone

| Options | No. of Respondents | Percentage% |
|---------|--------------------|-------------|
| Yes | 78 | 60.93% |
| No | 50 | 39.06% |
| Total | 128 | 99.99% |

Table no. 6 reveals that majority 78(60.93 %) of respondents faced different kinds of problems when using mobile phone or smart phone while 50(39.06 %) never faced any problem.

Table 7: kinds of problems in the use of mobile phone

| Options | No. Of Respondents | Percentage% |
|---|--------------------|-------------|
| Lack of Usage Skills | 10 | 7.81% |
| Slow or no internet | 69 | 53.90% |
| Costly data or internet subscription | 35 | 27.34% |
| Virus attacks | 11 | 8.59% |
| Distractions via unnecessary advert pop ups | 41 | 32.03% |
| Distractions of social media | 57 | 44.53% |
| Lack technical expertise when faculty | 11 | 8.59% |
| Storage issues | 49 | 38.28% |
| Poor battery | 29 | 22.65% |
| Total | 312 | |

Table no. 7 indicates the different problems faced by respondents in which majority of students 69(53.90 %) indicate slow or no internet as major problem whereas 57(44.53 %) distracted by social media, 49(38.28 %) point out the storage issue, 41(32.03 %) distracted by advertisements pop ups and some of respondents 35(27.34 %) faced costly data or internet subscription issue.

Discussion:

The results of analysis show that all the respondents own smart phone or mobile and they use their devices for the purpose of information seeking. Ebiye (2015) found in their study that 95 % of students owns smartphones and 95 % of staff owns smartphones. Vafa and chico (2013) revealed in their study that there is growing awareness in ownership of mobile phone by medical students and professionals.

Chepte and others (2023) found in their study that majority of students of first year MBBS used smartphone for their information need. Boruff and storie (2014) indicated widespread use of mobile devices by the medical students and professionals in 4 canadian universities. Results also revealed that majority of students use their phones for taking online lectures following with browsing internet, downloading e-textbook and medical apps. Ebiye (2015) revealed that majority of students avail different kinds of sources and services and commonly use smartphones for downloading e-books. Sambo and others (2021) revealed in their study that majority of students use different search engines on their mobile phones. YouTube found to be the most visited sites by medical students to for their academic need. Google, chatGPT, PubMed, Gray's anatomy are also some of the common website visited by medical students. Ebiye (2015) discover different medical sites used by medical students and professionals in which majority of students and staff used Gray's Anatomy as their priority. Koh and Wan (2014) identified 3 most common apps visit by medical students and staff Medscape, Skyscape and DynaMed. Boruff and storie (2014) Revealed in their study that UpToDate is the most commonly used site by medical students. It is found in the study that 60.93 % respondents faced different kind of problems when using their phones and lack of technical expertise when faulty in campus is the major problem faced by the students. Storage issue, battery problem, costly data services and advertisements pop ups are also some common problem that has been faced by medical students. Ebiye (2015) discover that most of the students faced different problems when using mobile phone, majority of students have lack of technical expertise when faulty within campus. Boruff and storie (2014) indicted that wireless access in hospitals and clinic is the major problem faced by medical students and professionals. Vafa and chico (2013) addressed that the majority of students have issue with small screen display they prefer larger display. Sambo andf others (2021) revealed in their study that poor battery is the ajor problem faced by medical students.

Conclusion:

This study is conducted to learn the impact of smartphone or mobile phone on information seeking behavior of medical students of DOW university of health sciences DMC Campus Karachi Pakistan. The results of the study show that almost every student in the university owns a mobile phone or smart phone, the students use their phones for different purpose but most of the student often use their phones for information seeking purpose, they avail different sources and services for the purpose of information seeking mostly for browsing internet, take online lectures, downloading medical apps and downloading e-textbooks. The analysis also revealed the most common sites used by medical students to fulfill their information needs such as YouTube, Google, ChatGPT, PubMed, Gray's Anatomy. The analysis also shows that most of the students faced different kinds of problem when using mobile phone in which lack of technical expertise when faulty within campus is the problem faced by majority of students.

References

- Alfawareh, H. M., & Jusoh, S. (2014). Smart phone usage among university students :Nigerian university case. *International journal of Academic Research*, 321-326
- Ansari, M. N., & Zuberi, N. a. (2010). Information seeking behaviour of media professionals in Karachi . *Malaysian Journal of Library & Information Science*, 71-84.
- Bolarinde, S. O., & Olasoji, O. B. (2020). Use of medically-related smartphone apps for health care information among health care professionals . *Indian Journal of Basic and Applied Medical Research*, 186-192.
- Boruff, J. T., & Storie, D. (2013). Mobile devices in medicine: a survey of how medical students,residents, and faculty use smartphones and other mobile devices to find information. *Journal of Medical Library Association*, 22-30.
- Chepte, A. P., Kate, S., & Pawar, K. (2023). Study Of Electronic Devices Usage In Learning Anatomy Among First MBBS Medical Students In A Tertiary Care Center In Western Maharashtra, India. *Research Journal of Pharmaceutical, Biological and Chemical sciences.*, 101-105.
- EBIYE SIR, E. V. (2015). Impact of SmartphonesTablets on the Information Seeking Behaviour Of Medical Students And Staf of Niger Delta University Bayelsa State - Nigeria. *Library Philosophy and Practice (e-journal)* , 1-16.
- Ilhaq, H., & Tousif, K. (2021). Information seeking behavior of undergraduate students of the University of Karachi, Pakistan . *Library Philosophy and Practice (e-journal)*.
- Kirvan, P. (n.d.). smartphones. Retrieved from TechTarget : <https://www.techtarget.com/searchmobilecomputing/definition/smartphone>
- Sambo, A. S., Lawal, A. M., & Helen, K. (2021). The Use of Smart Phones for Information Seeking by Undergraduate Students in Nigerian Specialized University. *Library Philosophy and Practice (e-journal)* , 1-18.
- Singh, K., Maharana, B., & Sahu, A. (2023). Information Seeking through Android Smartphone Mobile Technology by Legal Practitioners and Judicial Library Services. *International Journal of Library and Information Studies*, 1-6.
- Verma, S., & Sheth, M. (2018). USE OF MOBILE DEVICES FOR HEALTH CARE INFORMATION BY POST GRADUATE PHYSIOTHERAPY STUDENTS. *International Journal of Physiotherapy and Research*, 2905-2908.
- Wang, X., Jingyuan, S., & Lee, K. M. (2022). The Digital Divide and Seeking Health Information on Smartphones in Asia: Survey Study of Ten Countries. *JOURNAL OF MEDICAL INTERNET RESEARCH*, 1-10.
- Zia, M. W., & Tariq, H. (2014). use of electronic information resources by students of faculty of science university of Karachi. *International Journal of Digital Library Services*, 80-91.