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ORIGINAL ARTICLE

Impact of smartphone usage on the academic performance of undergraduate medical students.

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ABSTRACT… Objective: To assess the effect of smartphone usage on the academic performance of the students of Sahiwal Medical College. **Study Design:** Cross-sectional study. **Setting:** Department of Physiology, Sahiwal Medical College, Sahiwal. **Period:** 24th May to 25th July 2022. **Methods:** and a validated questionnaire was shared among the 114 undergraduate students of 1st and 2nd year MBBS of Sahiwal Medical College. **Results:** Our study involved 114 participants of age between 18-20 years. The majority of the participants were females (78.4%) and the duration of smartphone usage of most students was between two to six hours per day (66.7%). No statistical significance was found between the usage of smartphones and the academic performance of students. **Conclusion:** There is no association between smartphone usage and the academic performance of undergraduate medical students.

Key words: Academic Performance, Smartphone Usage, Undergraduate Medical Students.

INTRODUCTION

With the advancement in science and technology, the usage of smartphones has become very common these days. Smartphone is a portable device that is replacing computers and laptops day by day. Among all the digital devices, people use 55% of mobiles 42% of desktops, and 3% of tabs in daily use and we can evaluate that smartphone is the most commonly used device.[1] About 6.4 billion people[2] own mobile phones worldwide and this percentage even more increased during the COVID pandemic duration.[3] Today a great percentage of students use smartphones for their studies, which is why we intended to research this topic.

Smartphones provide us access to various video lectures on different websites and YouTube. It also helps us to contact our teachers or mentors at any time without meeting them physically and helps us communicate with our class fellows.[4] As medical students, we can better learn anatomy and other concepts like molecular structures in 3D on mobile phones, which are difficult to understand in 2 dimensions from textbooks. Despite all the advantages of smartphones listed above, they also have some drawbacks like notifications received during lectures divert the attention of students.[5] Similarly, during COVID students used smartphones addictively rather than using them for their studies. They spent most of their time using social media apps that badly affected their grades.[6]

Our purpose for this research was to find out how smartphones impact the academic performance of students if it has both advantages and disadvantages and how they affect their grades.[7] Similarly, to assess whether smartphones may either have appreciable or simply no significant impact on academic performance. Therefore, we created a questionnaire that included those types of questions that covered both aspects of smartphones and then compared those with students' grades so that we could find a relationship between smartphones and students'

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learning behavior.

METHODS

This cross-sectional study was conducted at Sahiwal Medical College, Sahiwal from 24 May to 25 July 2022 after taking ethical review board approval (76/IRB/SLMC/SWL). The questionnaire about "The Impact of Smartphones on Academic Performance" was distributed among 1st and 2nd-year undergraduate students of MBBS while the students of 3rd, 4th, and final years were excluded from the study. The total sample size was calculated by the following formula.

$$N = \frac{z_{\frac{\alpha}{2}}^2 * p * (1-p) * DEFF}{d^2}$$

Sample size = 114[8]

The collected data was processed through the SPSS version 26, and then tables and diagrams were formed.

RESULTS

The demographic data of the sample is presented in percentages (Table-I). Most responses were obtained from female students as we can observe from the table below. The exact number of participants was 114 students out of which 24 were males and 87 females. The duration of their mobile phone usage of most students was between two to six hours on average per day.

Variable	Groups	Frequency	Percentage
Gender	Male	24	21.6%
	Female	87	78.4%
Mobile Phone Use	2 hours per day	24	21.6%
	2-6 hours per day	74	66.7%
	>6 hours per day	13	11.7%

Table-I. Demographics of the sample

DISCUSSION

In response to the question "I use my smartphone to take the test," the answer of the majority of participants was neutral.

	Variable	Median ± IQR
1.	I use my smartphone to [take the test]	3 ± 2
2.	I use my smartphone to [submit assignment]	3 ± 2
3.	I use my smartphone to [work on assignments]	4 ± 1
4.	I use my smartphone to [work on my presentations]	4±1
5.	I use my smartphone to [access E-Library]	4 ± 1.5
6.	I use my smartphone to [register for courses]	3 ± 2
7.	I use my smartphone to [navigate websites]	4 ± 1.5
8.	I use my smartphone to [read course-related materials]	4 ± 1
9.	I use my smartphone to [improve my academic performance]	4 ± 1
10.	I use my smartphone to [record lectures]	4 ± 1
11.	I use my smartphone to [watch course-related videos]	4 ± 1
12.	I use my smartphone to [share course-related information with friends]	4 ± 1.5
13.	I use my smartphone to [ask instructors course-related questions]	3 ± 1
14.	I use my smartphone to [study more efficiently]	4 ± 2
15.	I use my smartphone to [coursework productivity]	4 ± 2
16.	I use my smartphone to [complete my course work]	4 ± 1.5
17.	Students use a dictionary/ calculator or mobile phone in classes	4 ± 0.50
18.	Does the use of smartphones during your study time distract you?	4 ± 1
19.	Does using a smartphone in class assist your learning?	3 ± 2
20.	Does using a smartphone in class interfere with your learning?	4 ± 1
21.	Do the calls/messages received just before class impact your ability to concentrate?	4 ± 1
22.	Overall, I find a smartphone useful in my studies	4 ± 0.001
23.	CGPA	3.12 ± 0.35

Table-II

It is because in physical classes usually the tests are taken in hard copy but during the COVID-19 duration, classes were shifted to an online system so students used smartphones to attempt online tests. The majority is neutral because the usage of smartphones to take tests depends upon the situation whether the classes are physical or online. Our result contradicts another study which shows that there is no usage of smartphones for taking tests in most cases.[9]

When the respondents were asked about using smartphones for working on assignments and presentations, they strongly agreed but regarding the submission of assignments, there was disagreement. The reason could be that students use smartphones to collect information for presentations or assignments using different websites but they are directed to submit the assignments by hand. However, the lack of awareness about using smartphones for academic material was frequently cited as a barrier.[10]

Strong agreement among the students regarding the use of smartphones to access the E-library may be due to its round-the-clock and in some instances free-of-cost availability with no physical restrictions (i.e., no need to go to the library physically). Moreover, digital libraries are an easy and quick means of accessing books and vast information. Similarly, informal learning using social media apps on smartphones can be integrated with formal learning which leads to useful discussions and enhances the academic performance of students.[11]

Regarding navigating websites and registering for courses, it is convenient for students to use mobile phones since it allows them to access these resources from anywhere at any time. Additionally, smartphones are becoming increasingly versatile, meaning that many of the tasks that used to require a computer can now be done on a smartphone. That's why, students agreed about using phones. Similarly, during COVID-19 virtual learning increased which introduced students to a variety of other educational resources and increased their comprehension ability.[12]

Similarly, for reading course-related material and watching related videos, students also agreed on using mobile phones because it's easy for them to find data they can understand concisely rather than reading long paragraphs in books. Also, video lectures and 3D animations help them visualize the things they have studied to build strong concepts. Also, cell phones have many tools (i.e. through Whatsapp, YouTube, and e-mails, etc.) for sharing study-related material and providing an easy and anytime approach to instructors. A study also found a favorable correlation between the use of social networking sites, cellphone communication, and in-person social engagement.[13]

Despite all the advantages of cell phones listed above, there is a huge agreement on their disadvantages as well. Mobile phone is a major source of distraction due to calls, messages, and social media notifications received during study periods decrease their concentration on studies and reduce our thinking ability.[14] The use of the smartphone in the classroom for study-unrelated purposes had a negative effect on learning and taking notes.[15]

Overall, students find mobile phones useful in improving academic performance in concordance with some studies[16] while there are some other studies that contradict this statement.[17]

This study provides an association between smartphone usage and academic performance among 1st and 2nd year students of Sahiwal Medical College, Sahiwal. Although it may have important implications for understanding the link between the increasing use of smartphones and the academic record of these students, more research is required to carry out this kind of study in students of 3rd, 4th, and final-year students as well as in students of other colleges. Other digital devices can also be incorporated into research studies for improved outcomes to better understand the effects of these devices on the grade of the students.

CONCLUSION

Based on our results there is no association

between smartphone usage and academic performance of the undergraduate medical students of Sahiwal medical college.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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REFERENCES

1. Team, Broad band Search. **"Mobile Vs. Desktop Internet Usage (Latest 2023 Data)."** BroadbandSearch.net, 10 May 2023, www.broadbandsearch.net/blog/mobile-desktop-internet-usage-statistics.

2. "Fig. 1. **Mobile phone users in the world from 2013 to 2019 source:** The..." ResearchGate,

3. Serra G, Lo Scalzo L, Giuffrè M, Ferrara P, Corsello G. **Smartphone use and addiction during the coronavirus disease 2019 (COVID-19) pandemic: Cohort study on 184 Italian children and adolescents.** Italian Journal of Pediatrics. 2021 Dec; 47(1):1-0.

4. Gavali MY, Khismatrao DS, Gavali YV, Patil KB. **Smartphone, the new learning aid amongst medical students.** Journal of Clinical and Diagnostic Research: JCDR. 2017 May; 11(5):JC05.

5. Junco R, Cotten SR. No A 4 U: **The relationship between multitasking and academic performance.** Computers & Education. 2012 Sep 1; 59(2):505-14.

6. Serra G, Lo Scalzo L, Giuffrè M, Ferrara P, Corsello G. **Smartphone use and addiction during the coronavirus disease 2019 (COVID-19) pandemic: Cohort study on 184 Italian children and adolescents.** Italian Journal of Pediatrics. 2021 Dec; 47(1):1-0.

7. Talan T. **The effect of mobile learning on learning performance: A meta-analysis study. Educational Sciences: Theory and Practice.** 2020 Jan; 20(1):79-103.

8. Shakoor F, Fakhar A, Abbas J. **Impact of smartphones usage on the learning behaviour and academic performance of students: empirical evidence from Pakistan.** Int. J. Acad. Res. Bus. Soc. Sci. 2021; 11(2):862-81.

9. Shakoor F, Fakhar A, Abbas J. **Impact of smartphones usage on the learning behaviour and academic performance of students: Empirical evidence from Pakistan.** Int. J. Acad. Res. Bus. Soc. Sci. 2021; 11(2):862-81.

10. Al-Daihani SM. **Smartphone use by students for information seeking. Global Knowledge, Memory and Communication.** 2018 Aug 10; 67(4/5):194-208.

11. Chen B, Bryer T. **Investigating instructional strategies for using social media in formal and informal learning.** International Review of Research in Open and Distributed Learning. 2012 Jan; 13(1):87-104.

12. Dung DT. **The advantages and disadvantages of virtual learning.** IOSR Journal of Research & Method in Education. 2020 Jun 17; 10(3):45-8.

13. Jacobsen WC, Forste R. **The wired generation: Academic and social outcomes of electronic media use among university students.** Cyberpsychology, Behavior, and Social Networking. 2011 May 1; 14(5):275-80.

14. Campbell SW. **Perceptions of mobile phones in college classrooms: Ringing, cheating, and classroom policies.** Communication Education. 2006 Jul 1; 55(3):280-94.

15. Kuznekoff JH, Munz S, Titsworth S. **Mobile phones in the classroom: Examining the effects of texting, Twitter, and message content on student learning.** Communication Education. 2015 Jul 3; 64(3):344-65.

16. Han S, Yi YJ. **How does the smartphone usage of college students affect academic performance?.** Journal of Computer Assisted Learning. 2019 Feb;35(1):13-22.

17. Ng SF, Hassan NS, Nor NH, Malek NA. **The relationship between smartphone use and academic performance: A case of students in A Malaysian Tertiary Institution.** Malaysian Online Journal of Educational Technology. 2017; 5(4):58-70.

AUTHORSHIP AND CONTRIBUTION DECLARATION

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2	Minahil Shafique	Help in biostatiscs and data analysis.	
3	Aqsa Afzal	Supervision and revising it critically for important intellectual content.	
4	Fizza Noor	Final approval of the version to be published.	
5	Muhammad Waseem	Analysis and interpretation.	
6	Unsa Marrium	Write-up of the article.	