



Effect of Smartphones on Academic Performance and Learning Skill Among the Students of Physiotherapy

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Abstract: These days, many students use smartphones for a longer period & more frequently than computers because they are very small, portable & accessible. There is widespread use of smartphones among students. Smartphones provide the ability to get answers quickly. Now, many institutes are turning to the smartphone as a learning tool. However, there is not much research showing that smartphones have positive effects on college students. This study aims to assess the effect of smartphones on academic performance and learning skills among students of Physiotherapy. 120 undergraduate students were randomly selected from Banarsidas Chandiwalla Institute of Physiotherapy, Delhi. Participated students are asked to fill out a questionnaire. The questionnaire consists of two parts: 1 part consists of the participant's demographic data, and 2 parts consist of questions related to the effect of smartphones on academic performance and learning skills. Data was analyzed & graphical representation was done using Microsoft excel. 48.3% of participants reported using their smartphone for more than 6 hours a day. Most (48.3%) students believed smartphones help find updated information. On the other hand, 50% of the students believe that smartphones motivate active participation and discussion in the classroom, and most students also believe that smartphones save time and facilitate learning. This survey results indicate a positive and growing interest in using smartphones for academic purposes and learning skills among physiotherapy students. The finding obtained from our study indicates that using smartphones for academic purposes and learning skills can help students learn efficiently if it is carefully integrated into and outside the classroom. Based on the responses, we concluded that smartphone positively affects academic performance and learning skill among physiotherapy students.

Keywords: Smartphone, academic performance, learning skills, physiotherapy.

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1. INTRODUCTION

New information and communication technology departments have fueled globalization. The advancement of ICT and the sharing of knowledge and information have altered the mechanism of globalization, transforming the world into a "global village."¹ New technologies, including computer and telecommunication technology, have emerged during the past 30 years as the most astounding and revolutionary advances. ICT, a phrase frequently used interchangeably with information technology, has been described as the introduction and convergence of several technologies (IT).² Smartphone is a "mobile phone that performs many of the duties of a computer, often having a touch screen interface, internet connection, and an operating system capable of executing downloaded programs. With the advent of communication technology, smartphones have also become important for purposes such as personal, academic, and social networking."⁴ Nowadays, many students use cell phones for longer periods and more frequently than PCs due to their small size, portability, and availability. Smartphone applications benefit society due to the rise in smartphone adoption by providing affordable healthcare solutions.¹⁶ From a student's perspective, using a mobile device for everything from downloading and reading study materials in various MS Office formats to watching videos live streamed from around the world through Google and other sites that are freely available to students has turned what was once "COMMUTATION" into "EDUCATION." As a result, everyone is now considering getting a smartphone.⁴ Education in physiotherapy often focuses on didactic teaching approaches that emphasize learning facts and establishing habits of thought, reflection, and reasoning as part of practical knowledge. These innovative technologies have provided the opportunity for developing critical thinking methodologies, which help improve clinical decision-making skills, thus helping budding professionals and clinicians. Interactive programs that update themselves and are relatively simple to build and release necessary information anywhere, anytime are one of the benefits of mobile technologies, making them all the more crucial for students and professionals to use for learning at their speed.⁵ Students' have reported that m Learning initiatives have positively influenced learning, and this needs further exploration before we include them in actual teaching settings. ⁶ Thus, this study aims to examine the effect of smartphones on academic performance and learning skills among physiotherapy students.

2. METHODOLOGY

- **Study Design:** - cross-sectional survey design
- **Sample Size:** - 120 student
- **Sampling Method:** - Random sampling
- **Area of Study** – students were randomly selected from Banarsidas Chandiwalla Institute of Physiotherapy

• Inclusion Criteria

1. Age- 18-25 Year Undergraduate physiotherapy student
2. Students have enough comprehension levels to respond to the questionnaire.
3. Smartphone user from the past 1 year.

• Exclusion Criteria:

1. Students using smartphones for less than 1 year.
2. Students who don't have internet access

2.1. Procedure

In this research, 120 subjects of undergraduate students from Banarsidas Chandiwalla Institute of Physiotherapy were selected by random sampling method to participate in this study. Subjects fulfilling the inclusion criteria were selected. Informed consent was taken from each subject, meeting the inclusion criteria, explaining the purpose of the study, and ensuring the confidentiality of information. The questionnaire consists of 2 parts: the first part consists of participants' demographic data, and the demographic questions consist of general questions like name, age, and current academic year, and the second part consists of questions related to investigating the effect of mobile phones on academic performance and learning skill.

2.2. Data analysis

Descriptive statistics are presented in frequencies and mean, median and standard deviations. Categorical variables are summarized by frequency (percentage) and represent a summary of scale variables. Pie charts are used for pictorial representations. SPSS version 22 software is used for data analysis

3. RESULTS

All students submitted the questionnaire, and the results were as follows; Students were given a questionnaire to discover the effect of smartphones on academic performance and learning skills among the physiotherapy students. All students submitted the questionnaire, and the results were followed. A total of 120 students participated in this study, and out of 120 students, 87 were female, and 33 were male. Table-1 (Demographic characteristics of participants (N=120)) shows that 48.3% of students spent more than 6 hours with their smartphones, whereas 51.7% spent less than six hours daily. Effect of smartphone on academic performance; Table-3 (Effect of Smartphone on Academic Performance) showed that 53.33% of students always used their smartphone for downloading study materials, and from figure-11 (How often does the use of mobile phones improve the quality of education?) showed that 41.7% students found smartphones helped them to improve the level of education. And results also show that 43.3% of students felt their academic performance improved after using cell phones for learning. In addition, it was found that 55.83% of respondents believe that they use smartphones to create a timetable and learning plans.

3.1. Effect of Smartphones on learning skills

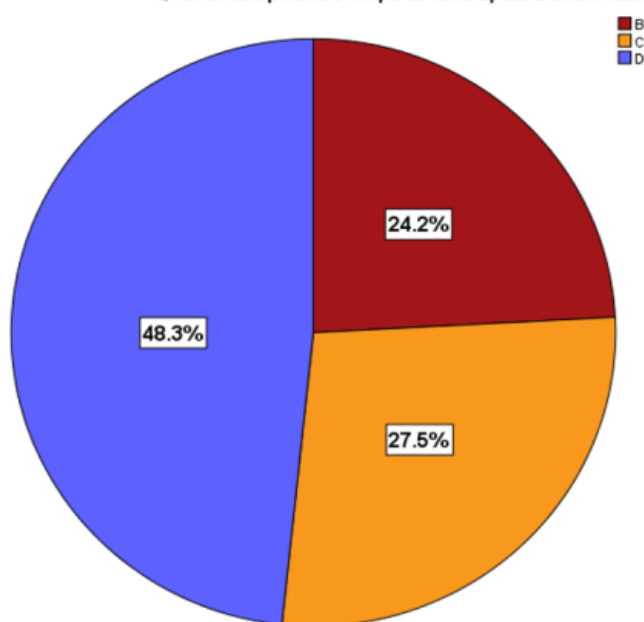
Table-2 (Effect of Smartphone on Learning Skills) shows that 34.2% and 30.0% of respondents always agreed that contact with teachers and colleagues for learning purposes increased, which helped them in learning and understanding better. It was concluded from Fig-1 (how often does the use of mobile phones help to find updated information?) that 48.3% of respondent believes that smartphone helps to find updated information. In addition, figure 4 (Is Mobile phone usage responsible for Student's low academic performance?) shows that only 9.2% of students believed that smartphones are always responsible for their low academic performance. On the other hand, the results obtained from this study indicate that smartphones are used for academic purposes such as downloading study material, recording live lectures, and doing assignments, etc.

Table 1: Demographic characteristics of participants (N=120)

Characteristics		Number	Percentage
Gender	Male	33	27.5%
	Female	87	72.5%
Age	18-19 years	4	3%
	20-21 years	55	46%
	22-23 years	59	49%
	24-25 years	2	2%
Grade enrolled	2 nd year	42	35%
	3 rd year	40	33.3%
	4 th year	38	31.7%
Frequency of usage of smartphone	Less than 6 hours	62	51.7%
	More than 6 hours	58	48.3%

Table 2: "Effect of Smartphones on Learning Skills"

S.No	Variable	Never A	Sometime B	Often C	Always D	Total
1	How often does the use of mobile phone help to learn specific topics?	13(10.83%)	52(43.33%)	36(30%)	19(15.83%)	120(100%)
2	How often does the use of mobile phone saves time and facilitates learning.	9(7.5%)	28(23.33%)	52(43.33%)	31(25.83%)	120(100%)
3	How often does the use of mobile phone improve the quality of education?	13(10.83%)	34(28.33%)	50(41.66%)	23(19.16%)	120(100%)
4	How often does the use of mobile phone helps to find updated information	0(0%)	29(24.16%)	33(27.5%)	58(48.33%)	120(100%)

Q15. Smart phones helps to find upated information.**Fig 1: How often does using mobile phones help find updated information?**

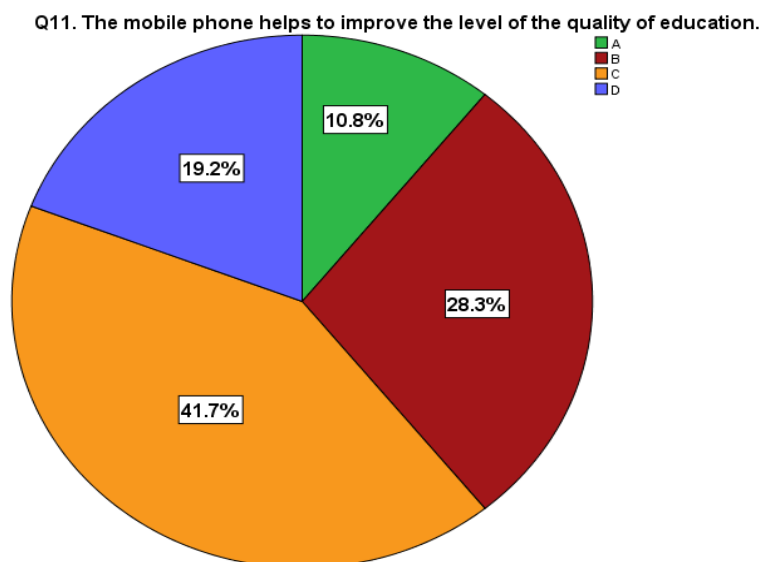


Fig 2: How often does using mobile phones improve the quality of education?

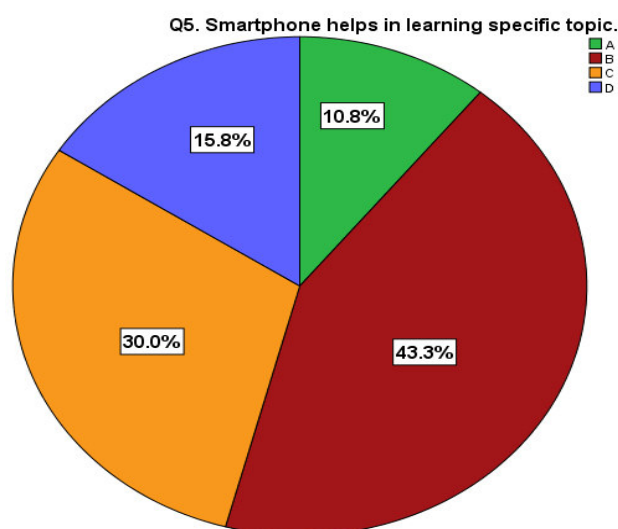


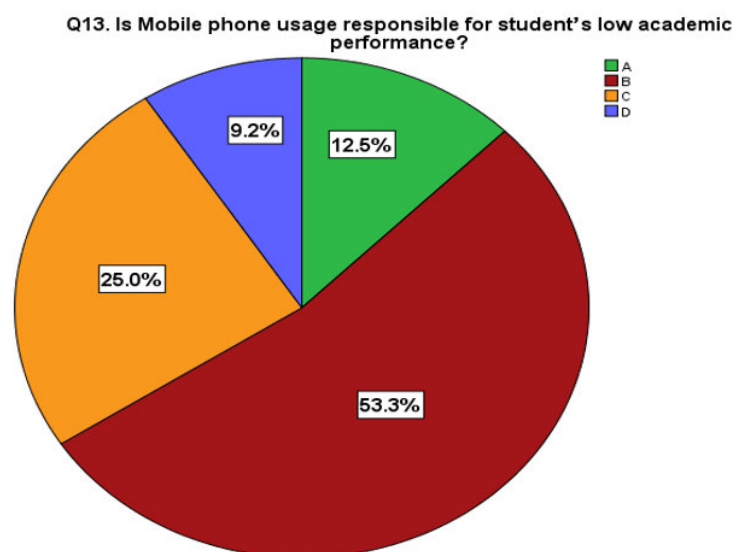
Fig-3: How often does a Smartphone help in learning a specific topic?

Table 3: "Effect of Smartphones on Academic Performance"						
S.No.	Variables	Never A	Sometimes B	Often C	Always D	Total
1	Downloading study material	3(2.5%)	21(17.5%)	32(26.66%)	64(53.33%)	120(100%)
2	Use as a calculator	13(10.83%)	52(43.33%)	26(21.66%)	29(24.16%)	120(100%)
3	My academic performance has increased due to mobile phone	11(9.1%)	51(42.5%)	38(31.66%)	20(16.66%)	120(100%)
4	How often does the use of a mobile phone help to do assignments	3(2.5%)	39(32.5%)	38(31.66%)	40(33.33%)	120(100%)
5	Use as a dictionary	18(15%)	50(41.66%)	28(23.33%)	24(20%)	120(100%)

Table 4: Response obtained from the participants on "Positive Impact of Smartphone."						
S.no.	Variables	Never A	Sometimes B	Often C	Always D	Total
1	How often does the use of mobile phone helps to easily contact with teacher for studies?	12(10%)	45(37.5%)	22(18.33%)	41(34.16%)	120(100%)
2	How often does the use of mobile phone helps to easily contact to classmates to get help in studies?	5(4.1%)	18(15%)	30(25%)	67(55.83%)	120(100%)
3	How often does the use of smartphone for creation of time table and learning plans?	37(30.83%)	48(40%)	27(22.5%)	8(6.6%)	120(100%)

Table-5, Response obtained from the participants on “Negative Impact of Mobile Phone on Learning.”

S.no	Variable	Never A	Sometimes B	Often C	Always D	Total
I	Mobile phone is responsible for my low academic performance.	15(12.5%)	64(53.33%)	30(25%)	11(9.16%)	120(100%)

**Fig 4: Is Mobile phone usage responsible for Student's low academic performance?**

4. DISCUSSION

This study aimed to determine the effect of smartphones on academic performance and learning skills among physiotherapy students. The result obtained from this study shows that most students believed that smartphones have a significant positive effect on their academic performance. For example, most students agreed that their academic performance is enhanced due to mobile phone technology. At the same time, some respondents use smartphones for academic purposes like downloading study material, recording live lectures, doing assignments, and learning specific topics, etc. Some students also believe smartphones are responsible for their low academic performance. Numerous studies were conducted to find the relationship between mobile phones and students' academic performance. In the study by Karla Nidhi and Singh Pratibha (2010), they found that the quick embracement of new technologies like smartphones gives both academicians and students an option to improve learning and teaching methodologies. They have explained that m-learning (mobile learning) helps create collaboration opportunities and eliminates barriers on and off campus.⁷ A similar study done by Wallace and colleagues in 2012 discusses the positive impact of smartphones on Student's perceived work efficiency. They suggested that students use mobile devices well in clinical, libraries, and social spaces.⁸ The result obtained by a study done by Jasmine Clinic and Dijana Planktak in 2012 is that most respondents could insert the name of the mobile application they use for education. They found that the following categories of applications were used for m-learning Pdf document readers, dictionaries, applications for the planning learning activity, and applications for enhancing memory.¹³ Similar results are obtained by S.S Subramiam's (2015) study, wherein he has described that the use of smartphones for educational purposes has increased many folds among society to fulfill students' knowledge, trust, and dreams. M learning has the potential to offer to learn anytime, anywhere, which helps in compensating learning when the students miss regular physical classes due to illness, etc.⁴ Blanka (2015) concluded

that it is obvious that university student is nowadays well equipped with mobile devices which enable them to study independently on place, time and authority.¹⁴ Trasler and Vosloo (2014) indicate that with an increasing number of human beings using mobile devices, there may be a multiplied interest in mobile mastering so one can bring about more cell studying initiatives, consisting of higher training.¹⁵ This study provides a strong positive relationship between smartphone use and student learning. In our research, students were asked whether smartphone technology enhances their academic performance. Most respondents indicated that m-learning saved time and facilitated learning (43.2%), which aligns with the abovementioned studies. This survey results indicate a positive and growing interest in using smartphones for academic purposes and learning skills among the students in physiotherapy. Thus, the use of smartphones for academic purposes and learning skills has the potential to help students to learn efficiently if it is carefully integrated into the classroom and outside the classroom. so According to their positive answer, we concluded that smartphone positively affects academic performance and learning skill among physiotherapy students.

5. CONCLUSION

Smartphones have an impact on social interactions. Smartphones can be used sensibly to obtain enough benefits in education, health care, and social life if society and those involved in higher education, such as professors, students, and education providers, recognize their obligations towards using these gadgets. Our poll found that students use their smartphones for tasks that ultimately improve their performance in class or are in any way related to education. This study has important ramifications for higher education administrators, employees, and students. The results of our study provide credence to the notion that students could enhance their academic performance through judicious use of their smartphones and applications. Also, this study found that Student's academic performance and learning abilities are

enhanced. According to our study, students use their smartphones for activities that eventually help them perform better in class or are somehow related to learning.

6. AUTHORS CONTRIBUTION STATEMENT

Ms. Nikita Tripathi conceptualized and gathered the data concerning this work. Nikita Tripathi and Dr. Nidhi Kalra

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analyzed these data, and necessary inputs were given for the design of the manuscript. Both authors discussed the methodology and results and contributed to the final manuscript.

7. CONFLICT OF INTEREST

Conflict of interest declared none.

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