

## Students' perception of WhatsApp usage as an additional learning aid at a Dental College in Pakistan

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### ABSTRACT

**BACKGROUND & OBJECTIVE:** Technological advancements have transformed society into a global entity; medical education is no exception. Innumerable social media platforms such as Facebook, WhatsApp, Instagram, and Edmodo encourage collaborative learning, improved communication, and knowledge-sharing. The current study aims to assess students' perception of WhatsApp as an additional educational and learning aid for communication purposes, sharing of learning materials, and as a discussion forum.

**METHODOLOGY:** This cross-sectional study was carried out from July 2021 to December 2021 at Faryal Dental College, Sheikhpura, Pakistan. A standardized questionnaire was prepared and circulated amongst students of 1st Year BDS to Final Year BDS. Responses were analyzed using SPSS Version 20.

**RESULTS:** The study comprised 150 participants; the majority, i.e., 62% (n=93), were females, and 38% (n=57) were males. Learning through WhatsApp was found to be useful by 90% of students. An association ( $p \leq 0.02$ ) was found among both genders regarding the usefulness of WhatsApp as an additional learning aid.

**CONCLUSION:** These days, social media is a dominant mechanism used for communal exchanges and is also utilized as an additional aid for teaching and learning purposes. Incorporating social media with conventional class teaching in medical education has evident advantages.

**KEYWORDS:** Smartphones, Active Learning, Collaborative learning, Social media, Undergraduate medical education, Pakistan.

### INTRODUCTION

The internet has allowed us to communicate globally, and the availability of social networks has made it even easier. Nowadays, social interactions through accessible online resources are not a new concept [1]. Social media is a widespread means of collaboration and interaction among university-going students. Social network tools such as WhatsApp, Facebook, YouTube, and Viber link acquaintances and households and permit smooth communication. Teaching can also be effortlessly carried out by employing these social media platforms [2-3].

Social media applications such as WhatsApp are adolescents'

most used messaging services these days, attributable to the assortment of utilities they present [2,4]. WhatsApp is a freely available application that is commonly used to send messages, pictures, and audio and video files [1]. Teachers also use WhatsApp as a learning tool for communication and sharing learning materials with the students. Groups can also be designed to enhance communication between participants [2,4]. Since medical and dental students are unresponsive didactic teaching in the classrooms activities that include sharing through mobile devices, such as discussion forums, can be used for imparting information [5-6].

Different reports have reviewed WhatsApp as a learning tool, and it was appreciated to be an extremely widespread social media application in addition to Facebook and Twitter.

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The current study aims to assess students' perception of WhatsApp as an additional educational and learning aid for communication purposes, sharing learning materials, and as a discussion forum.

### METHODOLOGY

This questionnaire-based cross-sectional descriptive study was conducted at Faryal Dental College, Sheikhpura, from July 2021 to December 2021. The inclusion criteria comprised of: subjects from both sexes male, female ranging from 18 to 25 years of age were incorporated. The exclusion criteria comprised of subjects who had ages less than 18 years and more than 26 years were omitted from the analysis.

A standardized and validated questionnaire was prepared and circulated amongst students of First Year BDS to Final Year BDS. The sample of the study was calculated through the WHO sample size calculator. Participants were informed about the purpose of the study, and informed consent was sought beforehand.

The questionnaire comprised 14 questions divided into three sections. The first section included demographic and technical information. The second section comprised four questions regarding educational perspective, and the third section consisted of five questions evaluating the instructional aspect of WhatsApp on learning. Responses from all the forms were analyzed using Statistical Package for Social Sciences SPSS® software for Windows® version 20. Ethical approval was taken from the Institutional Review Committee before the commencement of the study (Ref. No. FDC/ERC/2021/23. Descriptive statistics such as frequency distribution and cross-tabulations were used to analyze the data. Categorical variables were expressed as frequencies and percentages. The relationship between technical, academic, and instructional aspects with different factors was established using the Fisher Exact test.

### RESULTS

Out of the total 150 responses collected throughout the six months, the majority, 62% (n=93) were females, and 38% (n=57) were males. 19.3% of the students participated from 1st year BDS; 24.7%, 22.7%, and 33.3% students were from 2nd year, 3rd year, and 4th year BDS respectively. Table-I summarizes the demographic characteristics of the study participants (n=150).

**Table-I: Demographic Details of Participants.**

Variables	n(%)
Gender	Male 57(38)
	Female 93(62)
Year of Study (BDS)	1st Year 29(19.3)
	2nd Year 37(24.7)
	3rd Year 34(22.7)
	4th Year 50(33.3)

Based on the perception of students on the technological aspect of the usage of WhatsApp as an additional learning and educational aid, the majority of the students (96.7%) stated that the use of WhatsApp was easy and there was no issue with the availability of smartphones. Few of the students (24%) had hesitations about the usage of WhatsApp as a learning method, while the rest (76%) were found to be fine and comfortable with its usage (Figure-I). It was also seen in the results that for most students, there was no issue with the availability of smartphones these days.

The mean value shows mostly students found WhatsApp as an additional learning aid, and less time-consuming compared to conventional lectures delivered in classrooms. As seen in the re-sults, timely communication and facilitator accessibility were the most common benefits acknowledged by most of the students (Table-II).

**Table II: Perception of students regarding instructional aspects shown as Mean+SD.**

Statement	Mean±SD
Do you find WhatsApp learning less time-consuming as compared to conventional lectures?	0.70±0.460
Do group participants use appropriate language?	0.95±0.22
Are group participants' posts relevant?	0.85±0.35
Did your use of WhatsApp learning increase the approach-ability of your facilitator?	0.90±0.30
Do you feel your learning is facilitated by timely communication of notifications and results via WhatsApp?	0.91±0.29

Learning through WhatsApp was found to be useful by 90% of students. Most of them also stated that this platform provided them a chance to interact with peers and positively participate in discussions to enhance their learning. Although the majority agreed that they were able to clear their concepts using WhatsApp, still 40% favored conventional lectures for the clarity of concepts (Figure II).

The association between gender and the technical, academic, and instructional aspect of WhatsApp was found, and an association ( $p \leq 0.023$ ) was seen among both genders and the use-fulness of WhatsApp as an additional learning aid, with the majority of students agreeing that they found WhatsApp to be helpful in their learning process (Table-III).

The association between the technical, academic, and instructional aspects of WhatsApp among all the years of BDS students was obtained, and no association was found to exist. Nevertheless, students over the passing years, found that WhatsApp helped them to clear their concepts as the study material and teacher guidance was just a click away from them (Table-IV).

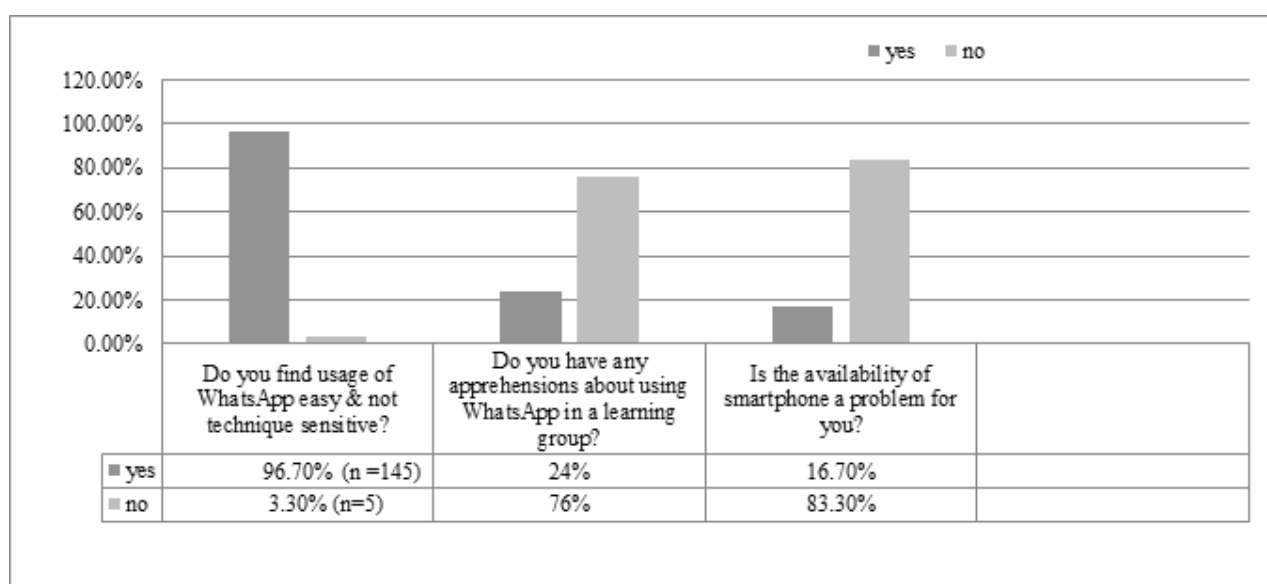


Figure I: Students' perception of the technological aspect of WhatsApp.

Table III: Association between technical, academic, and instructional aspects of WhatsApp with demographic data.

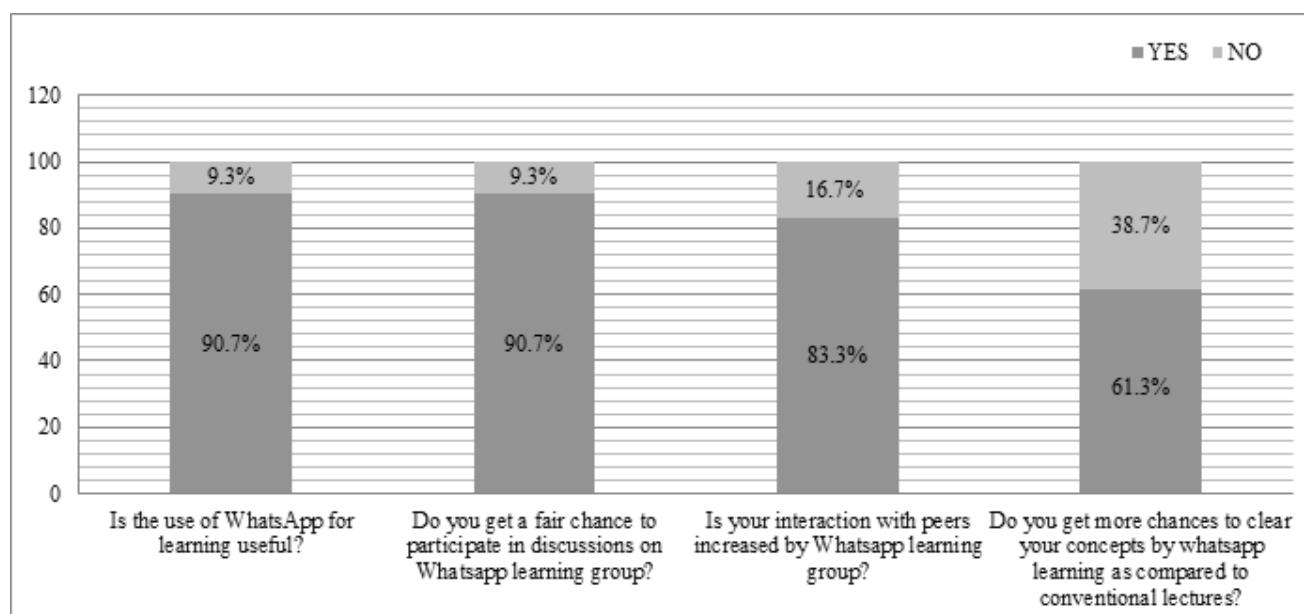
Students' perception of the technological aspect of WhatsApp		Gender		p-value
		Male	Female	
Usage of WhatsApp is easy & not technique sensitive	Yes	54	91	0.369
	No	3	2	
Any apprehensions about using WhatsApp in a learning group	Yes	16	20	0.432
	No	41	73	
Availability of smartphones	Yes	11	17	0.50
	No	46	49	
<b>Students' perception of the academic aspect of WhatsApp</b>				
Use of WhatsApp as an additional learning aid useful	Yes	47	88	0.023
	No	10	5	
Get a fair chance to participate in discussions on the WhatsApp group	Yes	50	86	0.39
	No	7	7	
Interaction with peers increased	Yes	46	79	0.50
	No	11	14	
More chances to clear concepts through WhatsApp learning	Yes	35	58	1.000
	No	22	35	
<b>Perception of students regarding the instructional aspect</b>				
Do you find WhatsApp e-learning less time-consuming as compared to conventional lectures?	Yes	42	63	0.46
	No	15	30	
Do group participants use appropriate language?	Yes	52	90	0.26
	No	5	3	
Are group participants' posts relevant?	Yes	49	79	1.000
	No	8	14	
Did your use of WhatsApp learning increase the approachability of your facilitator?	Yes	49	86	0.26
	No	8	7	
Do you feel your learning is facilitated by timely communication of notifications and results via WhatsApp?	Yes	50	86	0.39
	No	7	7	

\*p is significant at the 0.05 level (2-tailed)

**Table-IV: Association between the technical, academic, and instructional aspects of WhatsApp with study years of BDS students.**

Students' perception of the technological aspect of WhatsApp		BDS Study Year				p-value
		1st year	2nd year	3rd year	4th year	
Usage of WhatsApp is easy & not technique sensitive	Yes	28	34	34	49	0.32
	No	1	3	0	1	
Any apprehensions about using WhatsApp in a learning group	Yes	9	8	9	10	0.68
	No	20	29	25	40	
Is the availability of smartphones a problem	Yes	7	9	2	7	0.10
	No	22	28	32	43	
<b>Students' perception of the academic aspect of WhatsApp</b>						
Use of WhatsApp as an additional learning aid useful	Yes	26	34	30	45	0.98
	No	3	3	4	5	
Get a fair chance to participate in discussions on the WhatsApp group	Yes	24	36	30	46	0.21
	No	5	1	4	4	
Interaction with peers increased	Yes	26	29	28	42	0.69
	No	3	8	6	8	
More chances to clear concepts through WhatsApp learning	Yes	18	23	24	28	0.62
	No	11	14	10	22	
<b>Perception of students regarding the instructional aspect</b>						
Do you find WhatsApp e-learning less time-consuming as compared to conventional lectures?	Yes	20	27	26	32	0.65
	No	9	10	8	18	
Do group participants use appropriate language?	Yes	28	37	32	45	0.19
	No	1	0	2	5	
Are group participants' posts relevant?	Yes	24	33	29	42	0.88
	No	5	4	5	8	
Did your use of WhatsApp learning increase the approachability of your facilitator?	Yes	26	34	31	44	0.96
	No	3	3	3	6	
Do you feel your learning is facilitated by timely communication of notifications and results via WhatsApp?	Yes	29	31	31	45	0.14
	No	0	6	3	5	

\*p is significant at the 0.05 level (2-tailed)



**Figure-II: Students' perception of the academic aspect of WhatsApp.**

## DISCUSSION

In this new era of technology use of smartphones, social media, and different mobile applications has become very common. The concept of Mobile-learning (M-learning) has become famous among healthcare professionals and students [3]. Being user-friendly, WhatsApp instant messenger application is foremost used as an M-learning tool [6]. Accomplishments of knowledge sharing because of WhatsApp have been reviewed, and it has been realized that students regard it as the utmost popular social medium alongside Facebook and Twitter [1]. The use of smartphone applications like WhatsApp is not only for chatting and sharing information but its role in linking people and other aspects should also be explored for education.

Regarding the technical aspect of WhatsApp, the results of the current study revealed that most of the students found it easy to use, and smartphones were available to 83% of students. Studies carried out by different authors also support this perspective [7-10]. For 90.7% of students, this media was found to be effective in learning, and an association was found among both genders regarding the usefulness of WhatsApp as an additional learning aid, with the majority of students agreeing that they found WhatsApp to be helpful in their learning process. Wijaya et al. and Sirajul Munir et al. also found WhatsApp as a useful learning tool. The majority of students agreed that their interaction with colleagues is improved through this platform. This interaction helps them gather important, timely information, sharing of learning resources to facilitate their academic growth, and foster a collaborative approach to learning [11-12].

Studies by Annamalai et al. and Raiman et al. also revealed that WhatsApp was a common and easy source for interaction with peers, consequently overcoming the barriers to effective communication and enhancing the connectedness among them [10,13]. An additional study on instant messaging in dental education revealed that students preferred the use of WhatsApp for communication with their peers. In the present study, it was seen that 61% of students agreed that learning through WhatsApp helped them more in clarification of concepts while 39% preferred the conventional mode of teaching. More than 70% of students also agreed that this platform helps them clear their doubts immediately [14].

The results of the study carried out by Ranjan et al, were also found to agree with the present study, which pointed out that 74% of the study participants agreed that WhatsApp was an effective learning tool, and 87% said it to be an effective medium for knowledge transfer while 89% reported it to be an adjunct to classroom education [15]. This learning tool empowers easy and quick accessibility to study materials shared by the fellows and the instructors. It also enhances easy interaction and approachability of facilitators beyond the classroom boundaries, which are educational benefits that help students clear their concepts whenever they feel. Most of the students thought WhatsApp to be less time-consuming and told that their approachability to the

facilitator was increased in studies [16-17]. These findings agree with the results of our study in which we realized that students of all years found learning through WhatsApp less time-consuming as compared to conventional lectures.

The availability of a facilitator and learning anytime and anywhere are the advantages of learning through WhatsApp, with 86.72% and 86.55% of students agreeing to it. Furthermore, 73% of students also found learning anytime and anywhere to be convenient. The use of inappropriate language and sharing of irrelevant material is one of the few challenges that can disturb the group members, halting their interest in collaborative learning. 80-90% of participants in our study accepted that they were not facing such challenges. Most of the students in another study also did not witness the use of any foul language by the group members [18].

Another study emphasized the significance of social media, taking into account WhatsApp as an imperative learning tool to augment teaching and learning in medical education. Social media platforms, including WhatsApp, are also deliberated to be an efficient space for integrated learning as well as the distribution of curriculum to improve teaching and learning. In our study, it was seen that 24% had apprehensions regarding the usage of WhatsApp as an additional learning aid in a learning group, while 76% were found to be comfortable with its usage. Similar results were also seen in other studies, which supposed that there is gender-based dissimilarity in the usage of WhatsApp as a learning tool. Female students were found to be more relaxed and said it was a suitable tool for interacting with teachers [6,19-20].

## CONCLUSION

WhatsApp-based learning has an overpowering reaction and has facilitated the students immeasurably in the learning process in an enhanced and faster way with a widespread methodology and pervasive accessibility. Future studies are recommended with other social media application tools using larger sample sizes.

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#### **Authors' Contribution:**

**Afifa Ehsan:** Contributed to the conceptualization of the study and is responsible for the integrity of the study.

**Naila Umer:** Contributed to the conceptualization of the study and is responsible for the integrity of the study.

**Ali Raza:** Contributed to the initial write-up in the introduction and discussion part.

**Maryam Masood:** Helped in the acquisition, analysis, interpretation of data, and writing of the manuscript.

**Farhan Riaz:** Contributed to the initial write-up in the introduction and discussion part.

**Sana Akram:** Contributed to the initial write-up in the introduction and discussion part.

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