# What's Up and What's Down for WhatsApp in Medical Education

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**ABSTRACT**

WhatsApp is a smartphone messenger that employs the users' existing internet data plan to connect the user to their social as well as learning community. This study aimed to explore the use of the WhatsApp instant messaging as a source of learning for postgraduate students enrolled in Master of Health Professions Education. This mixed method study involved postgraduate students enrolled in Master of Health Professions Education at University of Lahore, Pakistan from January 2017- January 2018. Eighteen students filled the questionnaire after giving informed consent. This was followed by eight individual interviews of students consenting for interview. The findings of the research suggest that the use of WhatsApp instant messaging may assist students in learning as it fosters a social constructivist environment. This environment supported students in reinforcing various concepts by enhancing interaction within the groups, among teachers as well as assimilation of the content material shared. The study concluded that WhatsApp is perceived to be an acceptable supplementary application for educational purposes.

*Keywords:* *WhatsApp, Education, learning, postgraduate students.*

## 1. INTRODUCTION

Worldwide prevalence of internet and technology has opened new domains of teaching and learning in medical education. These technologies are playing an active role in shaping the way people communicate and share information both for social as well as educational purposes. Various mobile applications are specifically designed to cater diverse audiences with the goal of building one's profile and sharing controlled information with a list of people according to one's own preferences[1] . Worth mentioning social media applications are Facebook, Twitter and WhatsApp messenger application. Among these, WhatsApp has become the most popular means of communication due to its positive aspects like instant messaging, privacy, low cost and simultaneous messages to many people at the same time[2].

WhatsApp is an instant messaging application that allows ease of access and use to its users. It claims to have over 400 million users worldwide out of which seventy percent are from the student community[3] .With instant messaging, WhatsApp promotes sharing of information and materials among its users. Various groups formed in WhatsApp messenger allow its users to interact with different communities of interest. This ease of use as well as always availability at hand leads to the assumption of WhatsApp becoming a medium of knowledge acquisition and hence can have a role in educational grounds.

Pakistan is at the developing phase of technology development and acceptance. On the other hand, the students of Pakistan have currently followed traditional style of teacher with teacher-led sessions, though change is evident with upcoming generations. It is argued that time taken for development of the skills for using technology for education remains undeclared as it is not guaranteed these students will be able to absorb the technology and make efficient use of it.[4]  Moreover, with recent Covid pandemic and shift to online education, the need to explore the role of such educational technologies have arisen even more. Bringing such innovation in educational technologies require preliminary research on perceptions of these students regarding using WhatsApp for education purposes.

## 2. STUDY METHODOLOGY

### 2.1 Research Objectives

The objective of the study was to explore students' experience about the use of WhatsApp messenger in medical education.

### 2.2 Research Question

What are the students' experiences about the use of WhatsApp messenger in medical education?

### 2.3 Study design

Mixed method study with sequential explanatory design. This study design employs quantitative data collection in first phase followed by qualitative data collection methods (interviews in this case) to look for explanation for the findings obtained from quantitative data analysis and validation of result findings.

### 2.4 Study duration

Nine months, from May 2017 to January 2018

### 2.5 Study participants

Participants included postgraduate students enrolled in blended program of Master of Health Professions Education of University of Lahore, Pakistan.

### 2.6 Study methodology

This mixed method study employed the Sequential Explanatory Design in which Quantitative data was interpreted by using Qualitative results. The study was conducted at University of Lahore, over a period of nine months from May 2017 to January 2018.Sampling technique was purposive involving eighteen postgraduate students of enrolled in Masters of Medical Education program undergoing "Module of Research and Evaluation" This module was of three months' duration, involving nine days of face-to-face sessions followed by distance learning phase of three months. WhatsApp group was already existing with all eighteen students and facilitators from the course. All the activities done on WhatsApp including the face-to-face session as well as three month's distance learning phases were included in the study. During phase One of the study, all eighteen participants were requested to fill a questionnaire at the end of three-month period. Prior study performed by Bansal T. and Joshi D. formed basis of framework for the study questionnaire covering five themes (Ubiquitous Learning; Educational Benefits; Collaborative Learning; Social interactivity in WhatsApp mobile learning atmosphere; and Attitude towards WhatsApp mobile learning)(5). The questionnaire consisted of thirty items, developed after literature review using five points Likert Scale (Strongly Agree; Agree; Neutral; Disagree; and Strongly Disagree).

Since the participants consenting for interviews were from diverse backgrounds and places, individual, telephonic interview with semi-structured questionnaire was used as tool of data collection for phase two. Eight participants further consented to be interviewed on telephone for the study. Telephonic conversations were audio recorded after informed consent. The interviews aimed at clarifying the reasons for additional traits in the open-ended questions and to discuss the most highlighted characteristics in the questionnaire. Anonymity and confidentiality were maintained throughout.

## 3. RESULTS

This Mixed method study included eighteen postgraduate students enrolled in Module of "Research and Evaluation". Perceptions regarding role of WhatsApp in Education was analyzed in five main themes (Ubiquitous learning, Collaborative Learning, Educational Benefits, Social Interactivity, and attitude towards mobile learning).

### 3.1 Quantitative Analysis:

Out of the five themes, "social interactivity" was rated highest by the participants followed by "collaborative learning" via WhatsApp messenger. Participants rated "Attitudes towards mobile learning" the lowest. (See Table 1)

**Table 1.** Mean rating of uses of WhatsApp in learning.

| Themes | Mean | SD |
|---|---|---|
| Ubiquitous learning | 3.40 | 0.96 |
| Collaborative Learning | 3.57 | 0.78 |
| Educational Benefits | 3.35 | 1.08 |
| Social Interactivity | 3.89 | 0.95 |
| Attitude towards mobile learning | 3.23 | 0.97 |

### 3.1.1 Statements with top five ratings:

Participants rated WhatsApp messenger for allowing free unlimited messaging followed by allowing social interaction in study groups as well as for sharing knowledge with each other. (Table 2)

**Table 2**. Top five rated uses of WhatsApp in learning

| Sr.No. | Attitude | Mean | SD |
|---|---|---|---|
| 26 | It allows free unlimited messaging | 4.83 | 0.38 |
| 34 | We can interact with other in group discussion. | 4.71 | 0.71 |
| 42 | Engages students in ongoing social interaction | 4.33 | 0.77 |
| 44 | WhatsApp allows me to academically engage with peers any time and any place | 4.33 | 0.49 |
| 38 | WhatsApp applications good tool for knowledge sharing with others | 4.17 | 0.71 |

### 3.1.2 Statements with lowest five ratings:

WhatsApp messenger was rated lowest for demonstrating mastery of course concepts followed by identification of individual problem areas. Participants also rated "appropriate content sharing only" as in lowest five uses followed by feedback provision by instructor. (Table 3)

**Table 3**. Lowest five rated uses of WhatsApp in learning

| Sr.No. | Attitude | Mean | SD |
|---|---|---|---|
| 32 | Allows students to demonstrate mastery of course concepts | 2.5 | 0.99 |
| 7 | The instructor aids in problem identification areas in my study | 2.67 | 0.77 |
| 19 | Allows tracking of work throughout project cycle | 2.83 | 1.38 |
| 30 | All the comments, pictures, or video were posted in the WhatsApp were appropriate | 2.83 | 0.92 |

| 8 | The instructor gives me valuable (positive and negative) feedback on my assignments | 2.99 | 1.46 |

### 3.2 Qualitative Analysis:

During phase two, eight participants underwent individual, face to face interviews. The aim of interviews was to explore the roles of WhatsApp messenger in education as quoted by the participants in greater depth. Table 4 shows break up of codes and subthemes as obtained after qualitative analysis.

### 3.2.1 Ubiquitous Learning

Almost all students agreed on the instant availability and ease of use of WhatsApp messenger for learning. **Participant 4 said, "***Beauty of WhatsApp is that it is available everywhere, any time…***"**

**Participant 8 said**, "*Learning on WhatsApp is very beneficial for me as I can take part in discussion whenever I have some free time in hand. So, for me it is learning everywhere.*"

### 3.2.2 Educational Benefits

**Table 4**. Breakup of themes and codes upon qualitative analysis

| Themes | Representative Code |
|---|---|
| Ubiquitous learning | Instant availability<br>Learning anywhere, every where<br>Ability to catch up via posts |
| Educational benefits | Access to class announcements<br>Sharing of resource material<br>Variety of resources |
| Collaborative learning | Peer collaborations<br>Participation in discussion |
| Social interactivity | Peer interactions<br>Student-faculty interactions |
| Attitude towards learning through WhatsApp | Role of feedback<br>Risk of distractions |

Participants discussed about the benefits of using WhatsApp in education. Multiple uses were identified with direct access to class announcements in the message box. It also gave them the ease to check any discussion lying in the box. **Participant 3 said**, "*Whenever I missed some discussion I scrolled back and was able to get every learning material unlike in classroom.*"

Another use identified was availability of various resource material in mobile through WhatsApp which made it easier for the students to access material in hand. **Participant 6 explained**, *".... I think the ease at which we can access resource material shared in the group is excellent. Plus, WhatsApp also helped me read my material instantly during the discussion."*

Variety of instructional resources seem to be plus point for using WhatsApp in education. **Participant 1 said**, *"I think the best thing about WhatsApp is that we can have various pictures and videos for learning too."*

### 3.2.3 Collaborative Learning

Particpants acknowledged the role of whatsapp in connecting with each other and sharing their ideas.**Particpant 5 said,** *"Being in WhatsApp group helped me connect with other and share my ideas."*

One participant also commented on not being able to participate in ongoing discussion and feeling left out. **Participant 8 said**, *".... often I felt left out if I missed the discussion or did not participate in the discussion."*

### 3.2.4 Social interactivity in WhatsApp mobile learning atmosphere

Participants acknowledged the role of WhatsApp in promoting social interactions among themselves as well as the teachers. **Participant 2 explained**, *"WhatsApp is excellent medium to interact with each other while we were not in the session. It felt we never left the class at all."* **Participant 7 said,** *"WhatsApp promoted my learning by discussion in chat forum"* **Participant 2 commented**, "*I really like that our teachers can give us feedback in group to clear our understanding."*

On the downside, social interactions also led to distractions during working routine. Also, time was often wasted on non-relevant posts. **Participant 5 mentioned**, "*Well, the interactions in the group often became non-academic, and was often distracting when I am busy in my job."*

### 3.2.5 Attitude towards WhatsApp mobile learning

Participants discussed their attitude towards using WhatsApp for education. Majority acknowledged it as an interactive platform where they were able to receive feedback from the teacher. This enhanced their level of learning and confidence. **Participant 3 said**, *"Interaction with classmates via WhatsApp boosted my confidence and personalized feedback from teachers*

*helped me correct my mistakes timely."* Similarly, **Participant 7 said**, *".... peer learning in WhatsApp helped me in understanding subject in a better way."* On the downside, few participants also narrated negative impact of using WhatsApp, with distraction being on According to **Participant 5**, *"I got lost in virtual crazy world and it wasted my time."*

## 4. DISCUSSION

### 4.1 Ubiquitous Learning

WhatsApp is always favored due to its availability and places. Students involved in the research said they could freely engage with lecturers' resources whenever needed. A study conducted on 4th Year MBBS students reinforced this by concluding that constant availability of facilitator and learning anytime anywhere has made WhatsApp a new and convenient tool for teaching learning activity[6] .

Not only does it surpass the barriers of time and place, but WhatsApp also establishes an effective relationship between teacher and students in which there is open communication and timely feedback. Research suggested that WhatsApp provides students with a larger scope of feedback, often minute by minute feedback with no time lag[7] .

According to a research that reinforced the students' views on WhatsApp's ubiquitous role, Facilitator's availability and Learning anytime anywhere were top two advantages of learning through WhatsApp with 86.72% and 86.55% students agreeing to it[6] . Seventy three percent students involved in a study conducted by Bansal and Joshi (quote) considered learning anywhere and anytime more suitable, the rest disagreed due to family commitments[8] .

It is established that a healthy teaching environment is favored by uninterrupted, easy interaction between students and teachers. Students suggested that WhatsApp is the perfect tool for both parties to connect across different contexts of their lives. Studies have showed that learning is inherently social thus there leaves no ambiguity concerning the fact that WhatsApp aids in academic excellence as it allows lecturer-student relationship to progress and evolve over time[9,10] .

Many students favored WhatsApp due to its capacity to allow free, unlimited messaging thus removing any cost-related financial constraints on them, provided each student had a smartphone and could afford basic internet facilities which on the contrary could become a draw back for learning solely through WhatsApp.

WhatsApp allowed students to academically engage with peers any time and any place, which means that apart from establishing a productive student-teacher relationship, it also served as a platform where students could turn to help and assistance or healthy discussion concerning academia[11] .

### *4.2 Educational Benefits*

Participants in the study agreed that learning through WhatsApp has educational benefits like helping to organize their time via assignment and work reminders. Problem-based learning has opened new horizons in the scope of academia and with tools like WhatsApp, problem-solving exercises are provided with a platform to engage students. Similarly, students said there were assignments at the end of every lecture and WhatsApp the lecturers share those assignments followed by healthy discussions regarding them. This gave students a deeper clarity on the issues pertaining to topics discussed in the lecture[6] .

Perhaps another aspect favoring learning through WhatsApp that cannot be overlooked is the fact that as compared to the typical lecture-theatre environment, students found the instructor to be more supportive during course discussion on the social media tool who also offered continuous support throughout the class. This can be attributed to the transformative effect WhatsApp has on the teacher-student relationship as confirmed by studies done previously[12] .

Course resources and materials shared via WhatsApp were perceived to be helpful in completing course requirements and assignments. In contrast to live lectures, learning via WhatsApp gave students time to think about their response, thus improving feedback quality. Active tracking of work throughout the feedback cycle enhanced productivity while sharing of graphics such as pictures or charts made the learning process easier. In other words, WhatsApp provided with learner-centered construction of content, through communication and sharing of multimedia materials in the form of text, audio, images and video[13] .

However, the findings of a study showed that educational use of WhatsApp was employed by a limited number of students possibly because the students respond to course requirements and WhatsApp was not formally integrated into their learning[14] .

### *4.3 Collaborative Learning*

Combining learning and social constructivism has been a challenge faced by educationists as reaching a perfect balance between the two is hard. Students participating in this study felt that via WhatsApp teachers encouraged their participation and helped them digest the misunderstood or unclear content thus giving learning a collaborative essence. A space to discuss team assignments was provided. The mobile learning technology helps students to create a learning community, to easily construct knowledge and to share it with other members of a WhatsApp group through instant messaging[15] .

Discussion questions encourage students to share relevant experiences and examples. This exchange of information further encourages students to participate and practice together application skills. The effectiveness

of WhatsApp as a collaborative tool for learning among undergraduates in the University of Uyo, Nigeria was investigated in a study. It was found out that there is a significant difference in the retention ability of students who use WhatsApp application for learning and those who learn with the traditional teaching approach[3] .

### *4.4 Social interactivity in WhatsApp mobile learning atmosphere*

WhatsApp is one such advancement and use for communication and social interaction. It is documented that those students are happy who interact with their peers leading to less chances of loneliness, worry and jealousy. For students WhatsApp plays a role of a learning tool to share their knowledge, for informal learning and completing classroom activities.[12] It is helpful for student who learn with collaboration. On the other hand, WhatsApp has distracted students from completing their task and reaching their private study goals and have negatively impacted their studies.

### *4.5 Attitude towards WhatsApp mobile learning*

Research has suggested that WhatsApp can serve as an excellent tool with educational and academic potential with learning anywhere and anytime, as well as collaborative learning[16] .WhatsApp also facilitates online collaboration between students via discussions pertaining to lessons taught in class and serves as a platform for students to formulate publications online[3] .

Although there is a diverse variety of applications within the domain on social media that provide instant messaging, WhatsApp seems to be the most popular, especially among students, teachers and others within the academic sphere.[17]

Apart from enhancing communication, these social media applications are changing the educational landscape by changing the way students learn and the way teachers teach. The effect of these applications on learning outcomes is growing every year[18] .

### 5. CONCLUSION

The study is limited by very a smaller number of participants in the course. Future directions could include involving larger number of study participants. Social media allows students to carry out academic activities outside of institutional boundaries while gaining practical experience of workplace dealings. (19)However, issues of student engagement and knowledge retentions are being addressed by developers of social media content and education consultants to provide an educational environment conducive to learning. The studies indicate that the use of social media applications have both positive and negative effects on academic success depending on how they are used.

## AUTHORS' CONTRIBUTIONS

Noor-i-Kiran Naeem: Idea conception, data collection and analysis, and manuscript writing and review.

ZileFatima Naeem: Data Analysis, manuscript writing and Review.

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