



The effect of whatsapp messenger as e- learning tool on performance of undergraduate students of a Public Sector Medical College in Pakistan.

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ABSTRACT... Objectives: To verify the usability of social media like WhatsApp in delivering knowledge to 4th year and Final year MBBS students and to compare the improvement of knowledge gain through e-learning and didactic lecture. Concurrently, perception of students about e-learning via WhatsApp will also be gathered. **Study Design:** Prospective Analytical Interventional study. **Setting:** Department of Medical Education of Sahiwal Medical College Sahiwal. **Period:** 01.01.2020 to 31.03.2020. **Material & Methods:** On 4th year and Final year MBBS students two Whatsapp group were made, one for each class. Then the students were taught different topics by WhatsApp. Assessment of knowledge of e-learning through WhatsApp was done by feedback form. **Results:** The results revealed that technical, educational and instructional advantages of teaching learning activity via WhatsApp out pars disadvantages. Increase in interaction with peers and getting a fair chance to participate in group discussion were top two educational benefits of learning through WhatsApp with 64.10% and 62.80% students agreeing to it. A majority of the students (89.8%) agreed to the facts that the availability of smart phones was not an issue for them and they are very comfortable in using Whatsapp as e learning tool (61.6%). on the other hand 29.5 % of the students were disagreed with the fact that they are getting more chances in clearing their concepts on Whatsapp. **Conclusion:** Increase in interaction with the peers and getting more chance to discuss a particular topic with group has made WhatsApp a new and convenient tool for teaching/learning activity. Students also found Whatsapp as less time consuming as compared to conventional lectures. A few disadvantages, like lesser chance of clearing the concepts on Whatsapp can be overruled by making small groups and using mobiles with bigger screen.

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INTRODUCTION

Educators have started to notice the new technologies and explore their effects on student behavior and performance. While there is supporting evidence to suggest that these technologies have a large influence on the social development of adolescents, an even more pertinent issue for classroom teachers is what effects these technologies have on the academic development of young people.¹ Whatsapp messenger is one of these developing technologies. It's a free messenger application that works across multiple platforms like iPhone and android phones, and this application is widely used among undergraduate students to send multimedia messages like photos, videos, audios

along with simple text messages.² Since internet facility is required for using Whatsapp, lots of information can also be accessed in real time, and sharing that information through technology is both instantaneous and convenient.³ According to Bere³, Whatsapp messenger has the following collaborative features:

Multimedia

It allows the user to exchange videos, text messages, images and voice notes.

Group Chat

It supports the interaction of up to 50 group members.

Unlimited Messaging

The number of messages you can share on Whatsapp is unlimited. The application uses 3G/EDGE internet data plan or Wi-Fi to ensure continuous data transmission across platforms.

Cross Platform Engagements

Interactants with different devices (personal digital assistants, Smart phones, Galaxy tablets) can message one another through various media (text messages, pictures, videos, voice notes).¹

Offline Messaging

Messages are saved automatically when the device is off or outside coverage area.

No Charges involved

There is no charges involved for using Whatsapp as it uses same internet data plan which is used for email or web browsing.

PINS and Users Name

Whatsapp user need not to remember passwords or username as it works via phone numbers and integrates with users address books. Moreover, there is end to end encryption provided on Whatsapp which gives added security.

There is also an emerging evidence that these apps have a significant potential to support the learning process and has major implications on pedagogies, allowing direct access to lots of online resources, more focus on student's creativity, autonomy, and responsibility on one's own learning.^{4,5} Lauricella established that people remember only 10% of what they read, 20% of what they hear, 30% of what they see and 50% of what they hear and see.⁶ With the advent of such technologies which combines images, texts and audio all in one can make the percentage even higher than 50% .^{7,8} Plana et al., 2007 studied the use of Whatsapp in English language among students in Spain and reported a rise in motivation and a greater enthusiasm for reading in a foreign language.⁹ Amry also demonstrated the effectiveness of Whatsapp social networking in comparison with face-to face learning in the Classroom.¹⁰

Though different studies have been done on the use of the technologies in educational sector generally but no evidence is available till now related to use of Whatsapp as e-learning tool among medical students in Pakistan. So it's a first of its kind in Pakistan.

OBJECTIVE

- The goals and aims of the current study were
- To assess the effectiveness of social media like Whatsapp in delivering knowledge to MBBS students of Sahiwal Medical College, Sahiwal Pakistan.
- To associate the enhancement of knowledge-gain through e-learning.
- Collation of perception of learners about e-learning via Whatsapp.

MATERIAL & METHODS

Method of the study

This Prospective study with sample questionnaire study was conducted in the Sahiwal Medical College Sahiwal from 01.01.2020 to 31.03.2020, on MBBS students of 4th year and Final year. Response rate was 91%. After obtaining ethical approval from the ethical committee, the students are divided into five groups i.e., each group was comprised of each class ranging from 1st year to final year. Each group comprised 100 students and were allotted a separate Whatsapp group per class.

Selected topics were discussed by different faculty members in each Whatsapp group. After detailed discussions with the help of different diagrams and articles a Questionnaire was distributed among students.

The questionnaires was prepared and validated. Assessment of knowledge was done to all the groups in the beginning and at the end of the learning activity respectively. Perception of e-learning through Whatsapp was done by feedback form.

RESULTS

During this learning activity via Whatsapp, questionnaire of 13 questions was distributed

among 200 students of 4th year and final year out of which 182 students responded. So the response rate of our study was 91% (Table-I). Out of 182 students, majority were females (67%) and rest were males (33%). Also out of these 182, a total of 95 students participated from 4th year having 66.30% female participation while males were 33.70%. Among final year students, 87 responded to questionnaire out of which 32.20% were males and rest (67.80%) were females (Table-I).

The results revealed that technical, educational and instructional advantages of teaching learning activity via Whatsapp out pars disadvantages. Increase in interaction with peers and getting a fair chance to participate in group discussion were top two educational benefits of learning through Whatsapp with 64.10% and 62.80% students agreeing to it. A major junk of the students (89.8%) agreed to the facts that the availability of smart phones was not an issue for them and they are

very comfortable in using Whatsapp as e learning tool (61.6%). But on the other hand 29.5 % of the students were found to be disagreed with the fact that they are getting more chances in clearing their concepts on Whatsapp (Table-II).

Ninety percent of the learners were aware of the new method introduced and 70.00% agreed that a professional as well as comfortable learning environment was created on Whatsapp. More than 70% learner said that the facilitator promoted critical thinking and self-directed learning and handled distractions during the sessions appropriately (Table-II).

Class	Gender	Frequency – n (%)
Total (n=182)	Male	60 (33%)
	Female	122 (67%)
4 th year (n=95)	Male	32 (33.70)
	Female	63 (66.30)
Final year (n=87)	Male	28 (32.20)
	Female	59 (67.80)

Table-I. Frequency distribution of students (n=182)

S No.	Advantages/ Subcategories	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Technical						
1	Whatsapp is easy to use	100 (64.1%)	8 (5.1%)	48 (30.8%)	-	-
2	I am familiar in using Whatsapp	106 (67.9%)	6 (3.8%)	44 (28.2%)	-	-
3	I have no safety issues in using Whatsapp e-learning group	46 (29.5%)	78 (50%)	18 (11.5%)	10 (6.4%)	4 (2.6%)
4	Availability of a smartphone is not a problem for me	68 (43.6%)	72 (46.2%)	10 (6.4%)	4 (2.6%)	2 (1.3%)
Educational						
5	Use of Whatsapp e-learning is useful	24 (15.4%)	72 (46.2%)	42 (26.9%)	12 (7.7%)	6 (3.8%)
6	I get a fair chance to participate in a discussion on Whatsapp e-learning group	22 (14.1%)	76 (48.7%)	30 (19.2%)	16 (10.3%)	10 (6.4%)
7	My interaction with my peers is increased on Whatsapp e-learning group	28 (17.9%)	72 (46.2%)	34 (21.8%)	16 (10.3%)	6 (3.8%)
8	I get more chances to clear my concepts on Whatsapp e-learning as compared to conventional lectures	14 (9%)	32 (20.5%)	64 (41%)	34 (21.8%)	12 (7.7%)
Instructional						
9	I found Whatsapp e-learning less time consuming as compared to conventional lectures	32 (20.5%)	56 (35.9%)	36 (23.1%)	26 (16.7%)	6 (3.9%)
10	Group participants use appropriate languages	38 (24.4%)	96 (61.5%)	16 (10.3%)	-	6 (3.8%)
11	Group participants' posts are relevant and good use of time.	24 (15.4%)	76 (48.7%)	34 (21.8%)	18 (11.5%)	4 (2.6%)
12	By the use of Whatsapp e-learning group my bonding with the facilitator is increased	20 (12.8%)	60 (38.5%)	46 (29.5%)	24 (15.4%)	6 (3.8%)

Table-II. Advantages of Whatsapp as teaching learning tool



Figure-1. Palpation of Upper lid

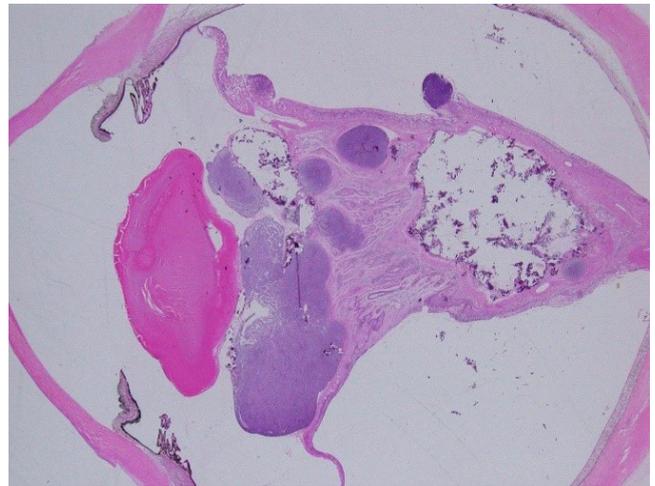


Figure-2. Chalky calcifications of Retinoblastoma



Figure-3. Bilateral ptosis discussed on Whatsapp

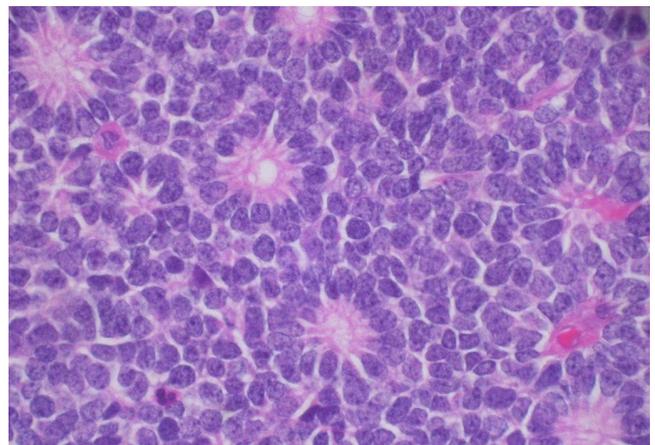


Figure-4. Round blue cell tumor with Flexner Winter Steiner Rosettes

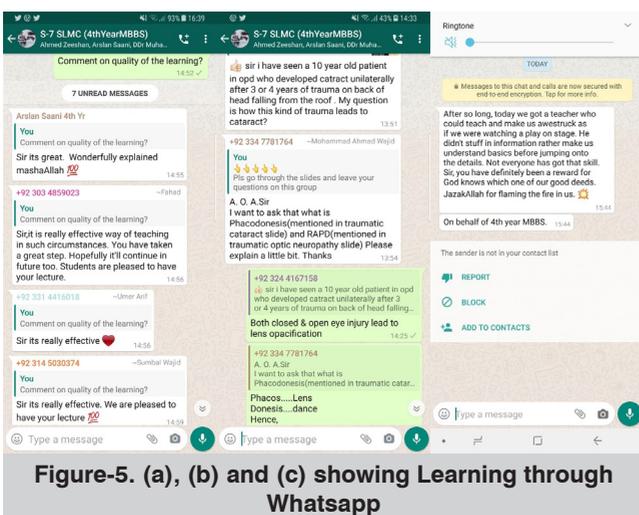


Figure-5. (a), (b) and (c) showing Learning through Whatsapp

DISCUSSION

Over the past year, the high penetration of Smartphones into the marketplace has introduced mounting use of Whatsapp as a communiqué platform for several student groups, and more lately for groups of teachers and their students as well.¹ Concept of virtual learning hence emerged with the use of social media. Teachers can create a group for their students that constitute a type of “simple social network” for the class.² As of today, it seems that Whatsapp has advantages over other technological tools employed by the education system, such as low cost, simplicity, accessibility, efficiency, and natural language.¹¹ Until recently there was no technological tool which was used naturally by adults and students alike.¹²

In the present study, 2 groups of 100 students each were created on Whatsapp and different learning activities were done.¹³ It was observed that more interactions in the forms of questions, answers, sharing of learning material as well as different emotional gestures of thank you, well done etc., were present in the sessions of Whatsapp. Rambe and Chipunza also observed that Whatsapp supports knowledge sharing between students, and between students and teachers.¹³ Students in their study named Whatsapp as a “communication, transnational platform” where they can express themselves freely in a non-restricted environment thus removing the low participation constraints characteristic of lectures. Bansal and Joshi also observed in their study that 82% students’ were eager to post videos, audios, texts on the problems and were also learning from other’s posts.¹⁴

Jaradat explored the impact of Whatsapp mobile learning activities on the achievements and attitudes of online students of France and compared those findings with students who were subjected only to face-to-face instruction in the classroom and found that the experimental group using mobile learning through Whatsapp mobile instant messaging performed better than the control group on the achievement test following the experimental period.¹⁵

In our study increase in interaction with peers and getting a fair chance to participate in group discussion were top two educational benefits of learning through Whatsapp with 64.10% and 62.80% students agreeing to it. M-learning increases the flexibility of accessing a variety of resources for learning independently at anytime and anywhere.¹⁶ Seventy three percent students in a study of Bairy found learning anytime, anywhere convenient with disagreement coming only from those students who did not want to compromise on family time.¹⁷

Amongst technical benefits, maximum of the students established that Whatsapp is simple to use and easily obtainable and downloadable. Samsudeen had concluded that Whatsapp is simple and provides privacy along with low cost

application as compared to other social network like Facebook or twitter.¹⁸ Since students in the present study also used to do social networking on Facebook and twitter.

Interaction between students, sharing learning material, easy accessibility to learning material, high Interaction with facilitator and doubts immediately cleared were the other educational advantages of Whatsapp learning activity with more than 70% students agreeing to it in our study. Fifty six percent participants in a previous study agreed that learning through Whatsapp mobile learning has educational benefits like immediate feedback to the problem; learning on move; deeper clarity on issues; revision of previously learned topics; learning from others problems; healthy discussions; and availability of learning material all the time.¹⁹ Whatsapp enables learning beyond the classroom’s borders and the high availability of teachers to the students’ questions can potentially enhance the learning process. It also enables easy and quick transference of links to study materials.^{20,21} But those students who were not in concurrence cited low internet speed for receiving context after a while leading to disruption of the flow of learning activity causing confusion.

Alongside the benefits, there were certain challenges confronted by the students throughout learning activity through Whatsapp. Twenty nine and half percent (29.5%) of the students were found to be disagreed with the fact that they are getting more chances in clearing their concepts on Whatsapp and majority were neutral on answering this question. Though 89.6% students agreed that they have smart phones and it is a pre-requisite for Whatsapp, it was temporary and the students who did not have smartphone in the beginning arranged one for the sessions. In a previous study conducted in Pakistan, Abbas et.,al also observed the fact that not all students have access to the application is temporary, since the number of students with smartphones increases daily.²²

A major educational disadvantage observed in the present study was that getting lesser chance

to clear concept through Whatsapp as compared to orthodox lectures likewise established mostly students dissenting or being neutral (71%).

CONCLUSION

Our study clearly depicted that the use of Whatsapp is very beneficial and productive for the students as a new learning methodology as many of students responded well to this new strategy of teaching in medical education. Blend of mediums alike videos, pictures and voice notes along with constant availability of facilitator and learning anytime anywhere, has made Whatsapp a new and suitable apparatus for teaching learning activity according to our study. A few disadvantages can be overruled by more involvement from institution and by making smaller groups and using mobiles with bigger screen.

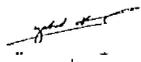
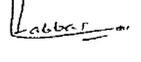
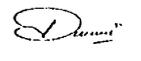
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AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Zahid Kamal	Conception and design of work, results compiling.	
2	Ahmad Zeeshan Jamil	Help in biostatics and data analysis.	
3	Muhammad Waseem	Supervision and recising it critically for important intellectual content.	
4	Raees Abbas Lail	Final approval of the version to be published.	
5	M. Junaid Iqbal	Analysis and interpretation.	
6	Nauman Aziz	Write-up of the article.	