

## Whatsapp as an interactive teaching tool in surgery for undergraduate medical students

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**Abstract: Background:** One way didactic lectures do not involve active participation of students, for better student's participation, interactive Teaching learning helps specially in clinical subject like surgery. Social network like what's App can have a positive impact in education over different variables, such as communication, motivation, academic success, student-student, student teacher interaction, and feedback any time anywhere. **Objective**

1. To assess the affectivity Whats App in delivering knowledge in surgery to final MBBS students and to compare the improvement of knowledge gain through e-learning over didactic lecture.

2. To study the perception of learners about e-learning using Whats app and impact of faculty participation

**Methodology:** This Prospective, interventional analytical study was conducted in Surgery department for final year MBBS students in general surgery. Two groups of students were taught the same topics by two different T-L activities i.e., through Whatsapp and via didactic lectures. A pre-test and post-test questionnaire on the topic being taught by two different set of faculties along with the feedback form was prepared and validated. Marks were evaluated for Pre – Test and Post – Test for the groups. (20 marks). Un-paired t test was used to compare the mean score obtained by both the groups. P-value<0.05 is taken as statistically significant.

**Results:** There was no statistically significant difference in the mean scores obtained by both the groups in pre test. The mean score for post test were 8.240 and 11.250, and showed statistical significance of p value

**Conclusion:** Constant availability of facilitator and learning anytime anywhere has made Whatsapp a new and convenient tool for teaching learning activity.

**Key words:** E-Learning, Whats app, Interactive learning, self-directed learning, Surgery.

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### I. Introduction

While there is supporting evidence to suggest that technologies have a large influence on the social development of students, more pertinent issue for classroom teaching is what effects these social media and web based knowledge on the academic development of medical students.<sup>1</sup> James M. Marshal 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. With the advent of such technologies which combines images, texts and audio all in one can make the percentage even higher than 50%.<sup>2</sup> Whatsapp messenger is a free social media application that works across multiple platforms like notepads, computers and smart phones almost accessible to every student. Audio, videos, multimedia messages and study materials like diagrams charts can be shared through Whatsapp<sup>3</sup>. These materials can be downloaded, shared among friends and peers can be studied by the students at their convenient time.<sup>4</sup> Availability of faculty constantly helps the students to learn both synchronously, and metachronously.<sup>5</sup> Instant messaging applications like Whatsapp can be effectively applied to teach medical students by busy clinicians at time convenient to both groups. In addition to instant feedback formative assessment by way of quizzes, one mark test can also be done.<sup>6</sup>

### II. Methodology:

Mixed method model, which combines both qualitative and quantitative approaches, were used in this study. In the quantitative aspect of the research, the effects of the information packs that were sent to students as support to the traditional teaching via Whatsapp in the experimental group were compared. In the qualitative part of the research, feedback obtained with pre-validated questionnaire. Marks were evaluated for Pre – Test and Post – Test for the groups separately. A feedback form is given to the students for evaluating the method of teaching done to the two groups to assess the best method of teaching.

This study was conducted at Department of General surgery for 3 months from 20/10/18-19/1/19 at Karpaga vinayaga Institute of medical sciences a tertiary teaching hospital. 100 students of Final year MBBS students were grouped in to 50 students for Didactic teaching and 50 students for Whatsapp teaching randomly. Prior to the start of the teaching schedule a pre test was conducted to both the groups simultaneously on same topic (Groin Hernia). Both the groups were taught the same topics by two different T-L activities. 50 students in Whatsapp group were told to download Whatsapp on their mobile phones. They were also ensured to have Wi-Fi as well as mobile data in their phone connection. A group of 50 students was created on Whatsapp by the facilitator and named as Group A. The rest of the 50 students comprised Group B taught only by didactic teaching. Both sessions handled by same faculties.

After those 50 students were subjected to Didactic teaching and 50 students were subjected to Whatsapp teaching, same topic by two different set of faculties both the groups were provided with post test questionnaire separately. Marks were evaluated for Pre – Test and Post – Test for the groups separately. A feedback form is given to the students for evaluating the method of teaching and perception about teaching faculty also collated.

**Statistical Analysis and results**

Un-paired t test was used to compare the mean score obtained by both the groups. P-value <0.05 is taken as statistically significant.

Knowledge gained by two different teaching learning methods was analyzed in the present study, the results showed statistically significant results. Students’ participation was appreciable with active felicitation by the faculties in the Whatsapp group. A total of 285 messages, 12 images, 16 videos and 9 webpage links were sent. Suitability of the topic chosen, materials provided, faculty availability, length of program analysed. 88% of the students found the material shared useful and 80% of the students felt the course length was sufficient for the topic. 90% of the students satisfied about the teachers’ participation. Sonia Gon in her study found no significant difference in way of performance between two groups, but in our study we found there was statistically significant difference between the two groups. Lewis Raiman et al in their study concurred that e learning like whats app complements traditional classroom teaching.

Amry studied the impact of Whats App mobile learning on the achievements and attitudes of online students and compared those findings with students who were subjected only to traditional instruction in the classroom and found that the experimental group using mobile learning through Whats App performed better than the control group on the achievement test following the experimental period.

**Table No: 1 Analysis of Mean scores of Didactic and What’s app group :**

Test marks	Didactic Group Mean ± SD	What’s app Group Mean ± SD	t test value	p-value
Pre-test marks	4.170 ± 1.589	4.480 ± 2.072	7.649	0.403
Post – test marks	8.240 ± 2.581	11.250 ± 3.577	5.781	0.000*

There was no statistically significant difference in the mean scores obtained by both the groups in pre test.

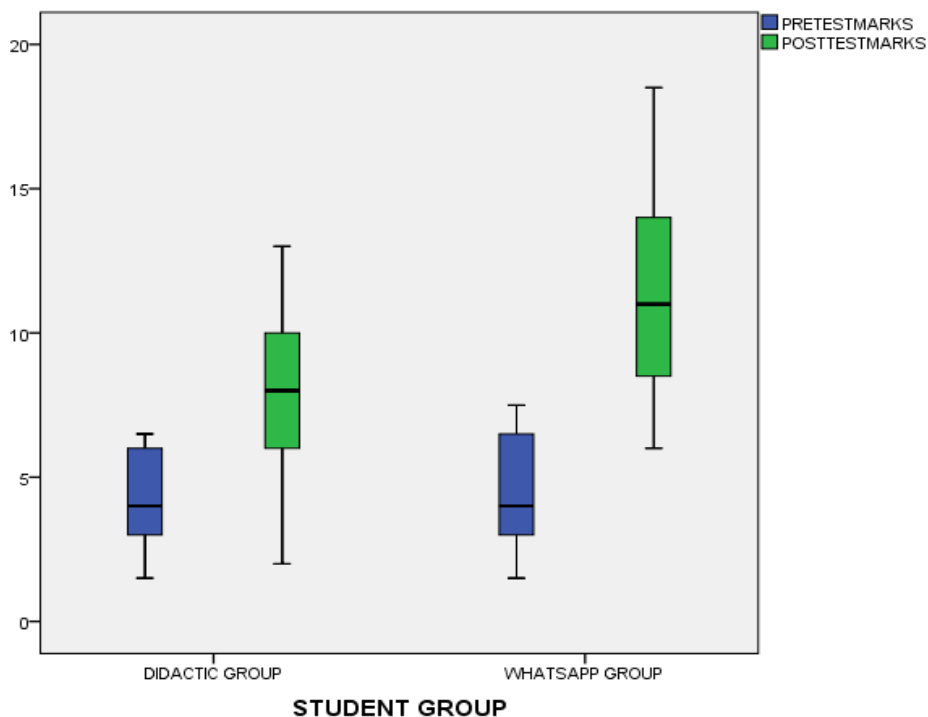
The Mean score of didactic group in post test was 8.240±2.581 and the mean score of What’s app group was 11.250± 3.577. There was a statistically significant difference in the mean scores obtained by both the groups in post test.

**Table.No:2 Feed Back On Learners Perception About Teaching Method:**

Questions	Didactic Group		What’s app Group	
	Satisfied (%)	Not Satisfied (%)	Satisfied (%)	Not Satisfied (%)
1. Suitability of the topic for teaching?	44	56	62	38
2. Whether course length sufficient for the topic?	75	25	84	16
3. Learning materials facilitated learning?	76	24	88	12
4. Are you comfortable with teaching method?	65	35	80	20
5. Do you think this will help in exam preparation?	67	33	94	6

**Table.No:3 Feed Back On Learners Perception About Faculties**

Questions	Didactic Group		What's app Group	
	Satisfied (%)	Not Satisfied (%)	Satisfied (%)	Not Satisfied (%)
1. Whether objectives communicated clearly?	68	32	85	15
2. Where you able to get answers for your questions?	72	28	92	8
3. Whether the teachers were interactive enough?	65	35	95	5
4. Do you think faculty participation satisfactory?	59	41	88	12
5. Are you satisfied with the content of the material provided by the faculties?	57	43	90	10



**Fig.No:1** Box Plot depicting the scores of the students in pre test and post test of Didactic and whatsapp group

### III. Discussion:

Whats app is not only an effective teaching learning tool in surgery, it can also be used as an assessment tool also<sup>7</sup>. Since high speed internet is accessible to all ,sharing of study materials interaction with faculties all make learning an interesting and interactive<sup>8</sup>. Since anonymity can be maintained students can participate freely without being worried about peer pressure. Since facilitated by qualified faculties it improves students' communication and attitude skills also.<sup>9</sup> According to Bere whatsapp also be accessed in real time, lots of information can shared instantaneously at a convenient time suitable to learners and teachers. Students were at liberty to ask any questions and clarify their doubts pertaining to the topic discussed. The main advantage with Whatsapp is that students can refer to the shared study materials any time anywhere which they found useful in their exam preparation. The e portfolio maintained by the faculties helps them to give feedback to the student and discuss the effectiveness of this type of teaching learning method.<sup>10</sup> Whatsapp messaging platform enabled students to take advantage of e-learning opportunities and apply effectively in their bedside surgery clinical discussion also.<sup>11</sup> Students found that Whatsapp Messenger as a platform to interact with the faculties and peers ,share study materials and ready references in their preparation for exams. Missed classroom lectures compensated by availability of study materials and able to access them when convenient for students. Patient Rambe, Aaron Bere in their study found heightened student participation, progressive shifts from traditional classroom teaching to innovative new learning methods making use of free social network like whatsapp messenger. Hossain IT, Mughal U, Atalla B suggested that students are willing to use instant

messaging for academic purposes highlighting a paradigm shift toward using online platform. Whats app not only improves students' interaction but also improves student teacher bond. The effectiveness has also been cited by a recent study carried out by Willemse on a sample of student nurses.<sup>12</sup>

#### **IV. Conclusion:**

Constant availability of facilitator and learning anytime anywhere has made Whatsapp a new and convenient tool for teaching learning activity. We found that there is significant difference between gains of knowledge from Whats App over didactic lectures, in addition the faculties were able to understand slow and fast learners, and one to one feedback from both the students and faculties helps the students to understand the topic taught better. One of the main benefits of this technology is the positive effect on student relations with faculties as shown by many studies. It could be used as a tool to develop self direct learning and make the students lifelong learners in a digital environment. E learning using Whats app is feasible and acceptable even in low resource institutions where there is shortage of qualified faculties and provides a framework that can be used effectively in cohorts of students. This platform can be used as a teaching learning and assessment tool make it more interesting and interactive.

**Limitations of the study:** Absence of free Wi-Fi connection in our college campus and students had to use mobile data. This study could be done only one topic as the students participated were exam going students. A crossover of groups with more topics needed to establish the effectiveness

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**Conflict of interest:** None to declare

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