International Journal of Anatomy and Research,
Int J Anat Res 2017, Vol 5(1):3659-64. ISSN 2321-4287
DOI: https://dx.doi.org/10.16965/ijar.2017.133

Original Research Article

WHATSAPP-ASSISTED LEARNING OF ANATOMY AS AN ADJUVANT TO TRADITIONAL CLASS-ROOM LEARNING: ACHIEVEMENTS AND PROSPECT

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ABSTRACT

Introduction: WhatsApp is one of the most popular tool of mass media communication besides Facebook and twitter. We all agree a good communication is essential between the teacher and student for a healthy academic environment in every discipline and it is must in Anatomy because of immenseness of this basic science as well as its exposure to the students in a short span. To ease this burden and to facilitate the teaching learning outcome we incorporated WhatsApp shared learning as an adjuvant to class-room teaching. So we created a group dedicated to anatomical discussion for MBBS 2015-16 batch. We discussed the current curricular topics, relevant queries and provided the students the multimedia resource as and when needed. The outcome of this was analysed and discussed through peer reviewed questionnaire and suggestions.

Materials and Methods: A descriptive study was designed to assess the outcome of the curricular assistance given to a batch of 150 students over WhatsApp. Their perception related to various aspect of WhatsApp assisted learning was documented using a questionnaire and analysed statistically and subjectively.

Result and Discussion: WhatsApp m-learning assistance was highly acknowledged by the participants with 74% positive response as an adept learning methodology, 89% appreciate its confusion clearing approach, 84% appreciate the availability of learning resource, 87% approve its quicker knowledge sharing, 78% found its helpfulness in complete coverage of anatomy curriculum, 79% acknowledge its time saving, 78% approves its learning capability by group discussion and 89% advocate it as an adjuvant to classroom learning in future.

Conclusion: WhatsApp based m-learning emerged as an adept adjuvant to class-room teaching in terms of ubiquitous availability and collaborative learning.

KEY WORDS: Medical Anatomy, WhatsApp, m-learning.

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Access this Article online

Quick Response code

DOI: 10.16965/ijar.2017.133

Web site: International Journal of Anatomy and Research
ISSN 2321-4287
www.ijmhr.org/ijar.htm

Received: 01 Feb 2017
Peer Review: 01 Feb 2017
Revised: None

Accepted: 02 Mar 2017
Published (O): 31 Mar 2017
Published (P): 31 Mar 2017

INTRODUCTION

On 2 July 2015 government of India launched Digital India campaign to empower the country digitally and provide the services through digital media [1,2]. The concept was imbibed by us at the department of Anatomy, R D Gardi Medical College, Ujjain in the teaching-learning sessions. The idea was to provide a platform to our students for sharing their doubts/ queries as well as sharing the conceptual aspect and also necessary information through digital media. The tool employed by us was

WhatsApp; because of its popularity, ease of access, security and large file sharing capability. The feature employed by us was its Group Chat feature; through which one can share messages, photos, files and videos with up to 256 people at once. Since we were going to unite a batch of 150 1st MBBS students as well as 10 faculty members of Anatomy department in the group, this would suffice. As WhatsApp is available on all mobile platform (Android, iPhone and Windows) as well as the web and desktop, one can seamlessly sync all the chats to one's computer so that one can chat/share through whatever device is most convenient to them [3].

E-learning is described as learning achieved through electronic media as a tool utilizing the internet. E-learning platform like web-based learning, cloud-based learning, Skype conversations, virtual classrooms; provides anywhere, anytime easy access for upgradation of knowledge and skills. Successful e-learning is dependent upon the self-motivation of individuals to study effectively [4]. So E-learning is basically a form of distance education where the learner and educator are separated by either time or space and this gap is bridged by internet. Mobile-learning or M-learning is a form of E-learning and is described as "learning across multiple contexts, through social and content interactions, using personal electronic devices such as MP3 players, notebooks, mobile phones and tablets [5]. Several studies have indicated that mobile, wireless device technology supports teaching and learning [6,7]. An increasing number of physicians, residents, and medical students currently use mobile devices such as Smartphones, iPads, and Tablets for education and use in clinical environments [8,9]. Medical students have to assimilate considerable new information during their studies especially with the need for evidence-based practice, and they must develop skills for lifelong learning, keeping their knowledge updated [10]. Lifelong learning, particularly in medicine, requires motivation and problem identification and solving skills relevant to the clinical situation [11].

Student of present generation learn in Smart classes, communicate through social media and use Web-references like Wikipedia to clear their doubts [15].

WhatsApp like any social media tool is very addictive; so we exploited this addiction to advantage by incorporating it into WhatsApp based learning.

Objective: This study was conducted to ascertain

1. The advantage of WhatsApp assisted learning as an adjuvant to traditional teaching from student's perspective.

2. Assessment of suitability, practicality and prospect of WhatsApp based learning in anatomy curriculum in particular and medical science in general.

MATERIALS AND METHODS

In accordance with the guidelines laid by Medical council of India; medical student in India learn anatomy in the 1st and 2nd semester along with physiology, biochemistry and community medicine. Anatomy curriculum aims at providing comprehensive knowledge of the gross and microscopic structure as well as the development of human body to ascertain the basis for understanding the clinical correlation of organs or structures involved and the anatomical basis for the presentations of disease. Thus the course is subdivided into gross anatomy, histology,embryology and neuroanatomy. As per semester subdivision we at RDGMC teach the histology, embryology and neuroanatomy along with gross anatomy of head and neck in the 2nd semester. Since the students have already learnt most of the gross anatomy during 1st semester; during 2nd semester they start correlating also. To ease the burden of learning and resolve the queries during this 2nd semester we introduced WhatsApp assistance with the teaching-learning session in 2015 batch of MBBS students.

Sample size and study design: The batch comprises of 150 students (n=150) of which 63 were girls and 87 were boys. A group named "Anatomy discussions 2015" was created and all the willing faculty members were added and made admin of this group. Then in a meeting with all the students the concept of this WhatsApp assisted learning was introduced and written consent of the students who were willing was taken. Three girls and three boys were

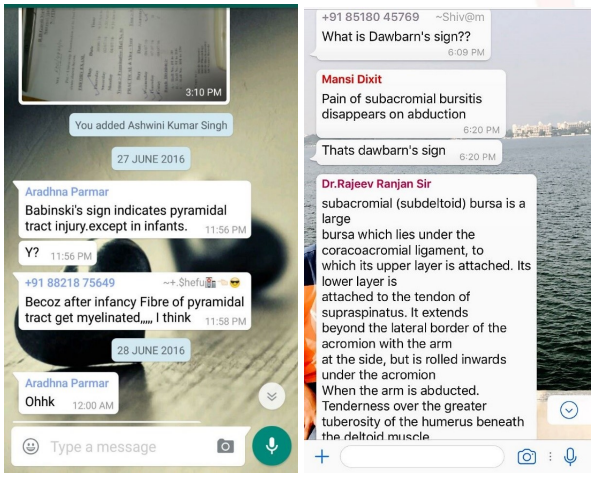
added initially and made admin; who later on added all the other students as members in the group. Rules and regulation related to group-based activities was explained and strict adherence to curricular discussion was advised.

The study was designed as a descriptive study to assess the outcome of the curricular assistance given to the students over WhatsApp for almost over 8 months i.e. after their university practical exams were over. Their perception related to various aspect of WhatsApp assisted learning was documented using a questionnaire.

Data collection and analysis: Student's response was evaluated after their exams and their performance as well as their views were documented through a pre-set sheet of questionnaire. The questionnaire included 10 closed-ended questions to be answered in Likert type scale and last open-ended sections that were further analysed by SPSS software to illustrate discussions of the quantitative data. Descriptive statistics was used to determine mean and percentages. Response to open-ended question was qualitatively analysed. The questionnaire consists of a set of 10 questions to be answered in Likert type scale**.** Each question/view was to be rated in the scale of 1-3 (1-I disagree, 2- Neutral, 3- I agree). The students were well informed beforehand about the questionnaire to clear their doubts about each of these 10 points. The outcome of the questionnaire was analysed subjectively as well as statistically.

RESULTS AND OBSERVATION

Fig. 1: Snapshot: Showing Student-Student (left) and Student-Teacher (right) discussion relevant to a query



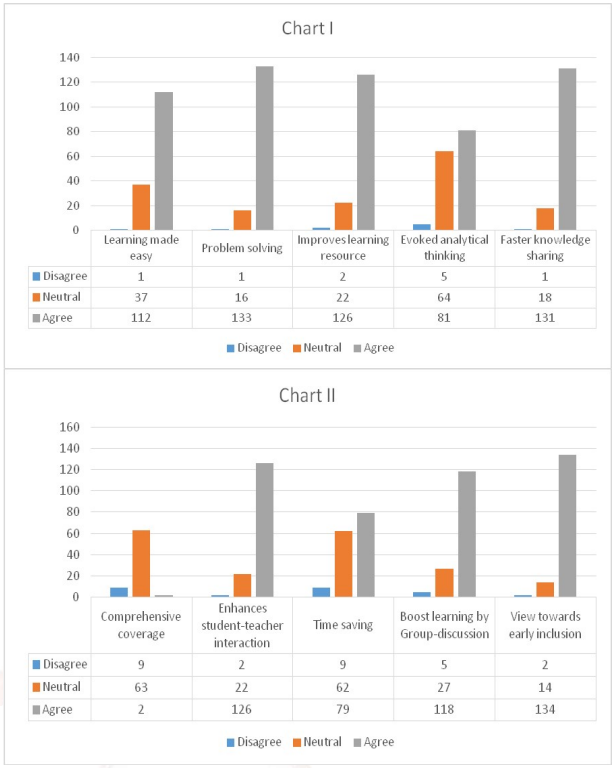


Fig. 2: Snapshot: Showing query related to a content of book and relevant discussion.

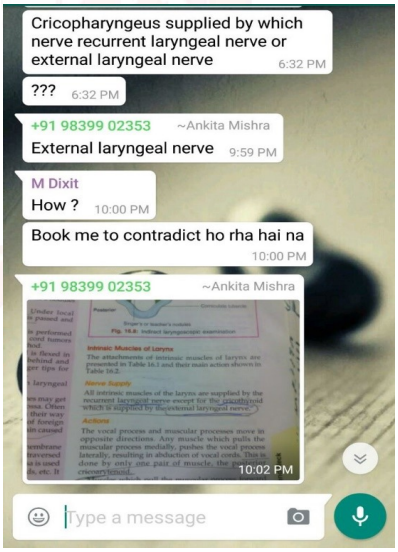


Fig. 3: Snapshot: Showing query related to a topic with discussion and rationally answered with reference.

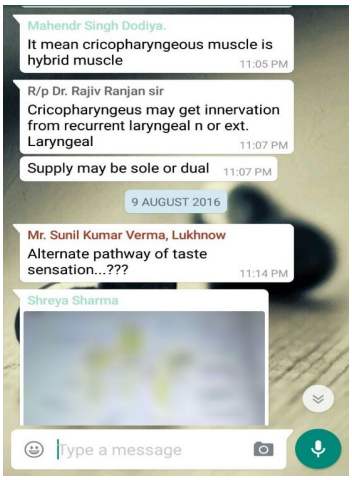
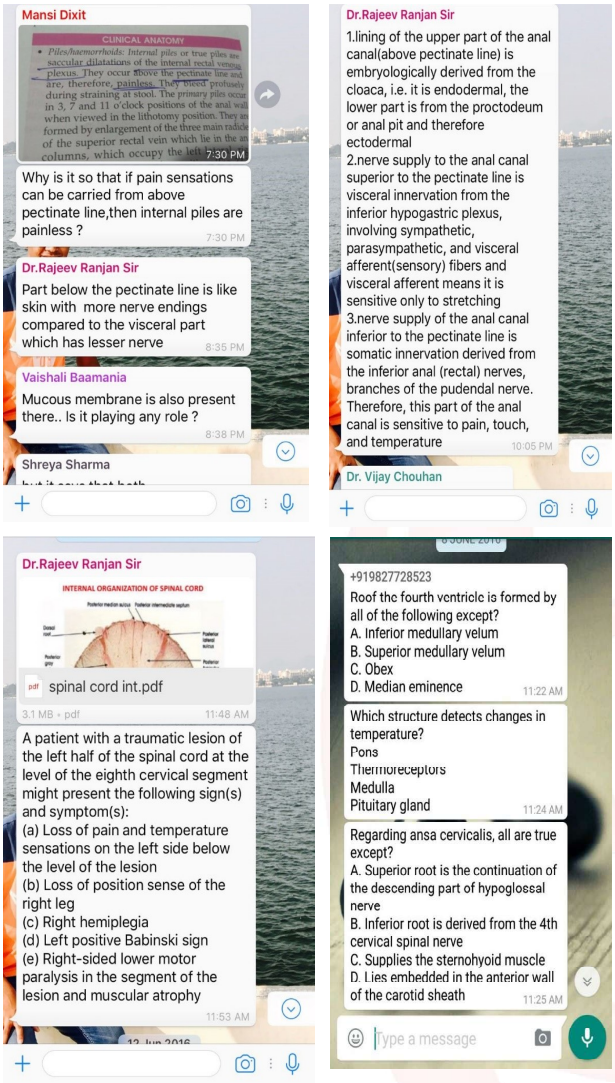


Fig. 4: Snapshot – Showing providing learning resource and relevant analytical questions.



DISCUSSION

WhatsApp has brought a new era of communication and is equally popular among teachers as well as students for sharing curricular as well as extra-curricular information [12]. These next-gen students are evolving and learning the newer technology way much faster and their text-books are no longer in their book-shelf but the entire web. But that also caused confusion and misinterpretation among them to an all-time high [13-15]. To overcome these flaws a ubiquitous communication is needed between the student and teacher and the charm was brought by WhatsApp messenger.

Various researches have articulated the value of m-learning as follows: encourage learners to learn by anticipating needs, make collaborative learning efficient and effective, and build a relationship between the learners that stimulates for consistent and progressive learning [5].

Despite the aforementioned academic incentives offered by these technologies, limited research has been conducted to determine the usage in medical field. Limited period of evaluation of its efficacy as a learning resource has been done in some researches but a comprehensive evaluation in its application with respect to Anatomy has not been done so far. Considering this we were compelled to do this study to assess the outcome of WhatsApp based m-learning in a student centric approach.

A descriptive assessment was made by the participant regarding different aspects of WhatsApp based m-learning.

Learning: First and foremost point was regarding the impact of WhatsApp assistance on learning. Since the approach is andragogic; hence was highly appreciated by the participant (~75% positive review). Provision of learning resource as powerpoint (.pptx) files, pdf files, videos and jpg images were acknowledged as valuable learning materials (84% voted in favour). Explanation with references from the relevant books and updated information from journal/research article were also considered impressive. So it results in a comprehensive coverage of anatomy despite being as vast basic medical science subject (78% positive review).

Though the approach to anatomy teaching now-a-days is its clinical correlation; we specially focussed our approach towards this. Lectures were succeeded by relevant clinical questions or images over WhatsApp group to steer analytical thinking (54% positive response). Also the same applied aspect was also asked by the student and were answered with reasoning. So this Analytical/ applied approach with problem based learning emerged as a confusion sorter (89% appreciated this). Moreover it also favoured a continuum approach of learning with the participant adding the relevant aspects and facts relevant to a particular topic.

Communicative interactions: The WhatsApp mode of m-learning has definitely improved the overall interactions between students as well

as student-teacher (84% positive response). It helped with better and quicker knowledge sharing as well as group-discussion to come to a conclusion for better understanding (79% agreed). The mobile way of sharing knowledge and asking queries also helped the shy or over conscious students immensely and even helped in the improvement of their overall communicative skill.

Time management and Ubiquitous learning:

WhatsApp learning has facilitated learning at ease; anytime and anywhere. The participants adore the at hand availability of WhatsApp learning and sharing at their own convenience. They can ask and reply at their own time of study. Albeit WhatsApp learning is Asynchronous learning still provide a low stress environment and within a more flexible time frame.

Answers and rationale provided by group discussion or faculty immensely helpful in adding the knowledge without spending much time in looking for various reference books and other sources. Thus it helped in learning the anatomy in a smarter and faster way without spending unnecessary time and resource (~53% admit this).

Future prospect and suggestions:

With the overwhelming response to this project of WhatsApp based learning and sharing module; we are assured of its future incorporation. The same was observed by A B Amry (2014) that WhatsApp m-learning based has a high positive impact on the achievement of students; hence they prefer this innovative educational technology [16]. Though there were few hindrances like

1. Time constraint : needs a 24 hours dedication from the faculty; solved by involving more faculty members

2. Web availability: non-availability of internet round the clock; solved by Wi-Fi-enabled campus and cheaper internet tariff.

3. Different dedication of students : it takes time to gain the faith, once the non-participator watch the benefit the problem resolves

4. Deviation and distraction: some discussion often turn off-topic, some people post some non-relevant post; that needs an intervention from the admin/faculty.

5. Psychomotor learning could not be covered: still waiting for a resolution.

6. Addiction: to WhatsApp, since now involves learning turn into advantage.

Also some valuable suggestion includes:

1. Early inclusion of WhatsApp learning in curriculum – accepted

2. WhatsApp group for other 1st MBBS subjects – suggested to relevant subjects

3. One WhatsApp group for all 1st MBBS subjects for inter-disciplinary co-ordination – suggested

4. Sharing of important dissection videos – accepted

CONCLUSION

WhatsApp based learning has an overwhelming response and has helped the participants immensely in learning anatomy in a better and quicker way with a comprehensive approach and ubiquitous availability. So with ever changing medical field, learner should be updated and can only be achieved through a collective approach and mutual sharing of knowledge. Considering the results and suggestion we strongly advocate WhatsApp-learning as a proficient tool to supplement traditional classroom teaching.

Limitations of the present study are assessed as follows: The sample size is small. (comprise a batch i.e.150 students), The study was conducted only with anatomy curriculum. The questionnaire employed to assess the students' view towards the WhatsApp based m-learning processes contained only 10 points.

ACKNOWLEDGEMENTS

The authors would like to acknowledge the guidance provided by Dr. Manish Patil , Professor and Head of Department of Anatomy and Dr (Mrs.) Sangeeta S. Babu, Professor(Anatomy). Also our sincere regards to Medical Director, Dr. V. K. Mahadik , R. D. Gardi Medical college, Ujjain for the guidance and financial support provided. We would also like to thank our dear and sincere students of 2016 batch for their participation and support.

Conflicts of Interests: None

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How to cite this article:

Rajiv Ranjan, Amit Jain, Anil Singh Baghel. WHATSAPP-ASSISTED LEARNING OF ANATOMY AS AN ADJUVANT TO TRADITIONAL CLASS-ROOM LEARNING: ACHIEVEMENTS AND PROSPECT. Int J Anat Res 2017;5(1):3659-3664. **DOI:** 10.16965/ijar.2017.133