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RESEARCH ARTICLE

CHANGES IN ANATOMY EDUCATION - AN OVERVIEW OF THE IMPACT OF SOCIAL MEDIA ON MODERN MEDICAL EDUCATION

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Abstract

Background: In the modern society, it is hard to see youngsters without a smartphone or any other social media accessible gadgets like smartwatches, laptops, tablets etc. Our study aimed to observe medical the students who are active in social media platforms and how do these platforms influence in their learning.

Methodology: In this, we made an online feedback study for MBBS students of AIIMS Rishikesh (2017,2018 & 2019 batches). Responses were collected from students who use social media daily for academic purposes as well as for entertainment and communication using Google forms. Responses were analysed and compared.

Result: Students who were active in departmental social media groups were found to secure higher positions in monthly evaluations/assessments.

Conclusion: Social media have become an integral part of the modern lifestyle. It has many roles in educating younger generations. Teaching and learning methods involving social media platforms are to be incorporated in modern education policies from very lower classes up to professional courses at government level itself and not at any isolated institutional or departmental level.

Introduction:-

Contemporary world is visualizing a very rapid growth and interest in the use of social media in various spheres of life such as entertainment, communication, collaboration, opinions and reviews, brand monitoring, media sharing, paid advertising etc. Education sector ranging from kindergartens and Montessori's to higher professional courses including political science, social science, engineering technology and various medical disciplines use social media and modern audio-visual aids in educating their students. Multiple learning and teaching tools include popular social media sharing apps such as Whatsapp, Telegram, Twitter, Google classroom, Google meet, Zoom, Skype, YouTube, Instagram, Med tube etc.

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In respect to medical education, social media is a remarkable tool[1] and has high potential in benefiting students of various medical fields including medical, dental, nursing and paramedical streams as well as educators including physicians, surgeons, researchers, nursing tutors, technical educators etc. Students could enhance their learning experience through numerous available tools in each application. Educators could customize the interaction or communication patterns of social media platform to better personalize according to the requirement of their student group, topics for discussion and cost involved. They could use multiple tools and there are a variety of opportunities for social networking and collaboration.

The purpose of this attempt is to promote the methodology of learning and teaching practice followed in the Department of Anatomy, at All India Institute of Medical Sciences, Rishikesh. We had been utilizing various modes of audio-visual aids in educating students of various medical courses since the very beginning of the institution. Audio-visual aids include PowerPoint presentations, videos and animations during didactic lectures, small group teaching, dissection on Virtual dissection tables (Anatomage&Sectra), Simulation labs with artificial cadaver, quizzes, clinical case presentations and clinical skills training. Enhancement programs and telemedicine workshops are being frequently used for student education regularly. Social media applications such as Whatsapp and Gmail are being continuously used in teaching and learning purpose as a regular tool since 2017 in the Department of Anatomy.

Modern technology contributes learning and teaching in a better and more effective way than the conventional method of teaching practice. New interventions create interest and increase the motivation of students. Hence learning outcomes become more permanent.[2]

Methodology:-

The study was conducted in the Department of Anatomy, AIIMS Rishikesh. For each batch of MBBS from 2017 to 2019 consisting of 100 students in each batch, Whatsapp groups (2K17, 2K18 & 2K19) were made for purely academic purposes. Since the students were grouped into 4 tables based on dissection purpose, other than the main group, 4 subgroups were also formed in WhatsApp. Professor and Head of the department, additional professors, associate professors, assistant professors, senior residents, junior residents, PhD scholars and MSc students were included in the groups along with the students. The same methodology is being used in case of postgraduate students too for their academic activities including teaching practice and research training.

Following each lecture, teaching materials are shared with the students through the above mentioned WhatsApp groups so that they could use those materials later for revision purposes. Questions and doubts are asked by the students and are discussed in groups and authentic replies were given by the respective faculty members. Multiple choice questions, clinical vignettes, radiological images including MRI /CT / USG/x-ray, research questions and even quiz programs were being conducted through these groups. Department of Anatomy promote our students to learn the subject with clinical correlations. Faculty discuss clinical case studies and post multiple-choice questions and picture quizzes for daily brainstorming.

As per our observation, we found that those students who interacted more actively through these social media platforms with the faculty and residents or even among themselves in student discussion, performed much better than in monthly assessments/evaluations done in the department.

On imposing lockdown in the entire country due to Covid-19 pandemic spread, undergraduate students were not in the campus. All routine classes which required physical presence were suspended. In all institutions of the country including those with professional courses aroused a question of continuing teaching and learning process. Academic Whatsapp groups continued to be active with daily interactions with students and didn't find much inconvenience. Topics were discussed as per given schedule. There was neither any confusion nor any difficulty in our institution in delivering lectures and conducting live interactive sessions with the 100 MBBS students at a time due to a very systematic approach to tackle the situation. Since the students and faculty were well familiar with online platforms, daily interactions sessions are being conducted subject-wise.

Results:-

As a part of our study, MBBS students from 2017 to 2019 were included in an online survey using Google forms. As per our observation, Whatsapp and YouTube users outnumber the users of other apps with a significant margin.

It was found that uses of YouTube and Whatsapp for academic purposes were 93.9% and 88.4%respectively. Social media uses secured more marks in both internal and monthly assessments which implies the role of use of social media apps in education. A detailed representation of the questionnaire and observations are listed in Tables 1 - 3 and in bar diagram 1.

Discussion:-

Anatomy is a core medical subject which requires an immense amount of visual imagination in three dimensions for understanding the spatial organization of structures with a human body and in a developing embryo. In many foreign universities, the teaching period dedicated to anatomy has been considerably decreased. In such a situation, a pre-recorded or pre-captured video, animation or images might be required by the medicos for learning a new concept or for revision. Social media tools are extremely helpful in such a situation.[2]

There have been various studies considering the use of YouTube, Facebook, Twitter, Instagram etc. for anatomy education. Douglas et al. in their study in July 2019 stated that in the end quarter of 2017, with an average daily users of about one and half billion became the most popular social media application. In a study by Bosslet et al. in 2011 found that 90% of medical students had an account in Facebook.[3]But, the percentage of students utilizing Facebook for academic purposes especially for learning anatomy was lacking. In our observation, we found that 61% of students from three MBBS batches from 2017-2019 are active in Facebook but only 11.6% among them utilizes the platform for learning anatomy. Usage of Facebook for learning purpose other than entertainment or sharing memories need to be encouraged even if many pitfalls exist in the platform such as lack of professionalism, privacy, social security and most often distractions around.

Hennessy et al. published an article in 2016 on how social media network Twitter influences anatomy education.[4] They used this as a tool for teaching neuroanatomy. They found that the learning and teaching through this network improved the self-esteem of students and gave an encouragement in revision. They could not suggest the influence of Twitter on the grades of students due to lack of evidence. In our study, we found that in about 11.0% of students having an active Twitter only less than 6.0% uses it as a learning platform.

Barry et al. in 2016 reported that 78%[5] of medical students recommended YouTube as their primary source for educational information, which includes pre-recorded lecture videos, animated videos and even narrated PowerPoint presentations. In our study, we found that almost 93.9% of students used YouTube at least twice a week in search of subject information. It strongly suggests the role and value of YouTube in medical education. At the same time, chances for distractions should not be ignored.

In an article published by Douglas et al. in July 2019, suggests the use of Instagram in medical and dental education.[1]They stated that despite being a popular social media network, there is a lack of performance data in the literature for validating its real impact on medical education. In our observation, among 68.9% of the students having an active Instagram account, 37.8% uses this platform as a mode of learning anatomy.

L Raiman et al. in 2017[6] and E Coleman et al. in 2019 published articles on the benefits of Whatsapp in medical education. Since it is one among the most popular, freely available and easy to use software which can be installed in almost all smartphones, it could be utilized to be an effective learning tool. E Coleman et al. suggested Whatsapp use for a medical education with a promising standard by integrating three strategies such as “exploration, enactment and assessment”.[7] They suggest further studies for clarifying the role of this social network platform for medical education.

In the Department of Anatomy, All India Institute of Medical Sciences Rishikesh, we had been using Whatsapp since 2017 in our departmental level. A main group comprising 100 students along with faculty and residents and 4 subgroups with 25 students each and respective faculty and resident in-charge were formed each year. PowerPoint files of lectures, educational videos, diagrams, quizzes, research questions, patient cases, radiological images including MRI/CT/USG/X-ray etc were being shared daily since these years.

Conclusion:-

When considering the studies so far on the impact of social media on anatomy education till date, it is found that only very few authors considered this as their study topic. There is a significant lack of comparative studies

considering even commonly used social media platforms. Most of the recent works including our observational study strongly strengthens the idea of the positive impact of social media on anatomy education. Even if regular contact teaching and learning sessions commence after the withdrawal of lockdown due to COVID-19 pandemic, current utilization of social media platforms should be encouraged at least to some extent in the way of small group discussions or doubt clearance sessions or even for the presentation of seminars. However, further research studies are required for comparing the impact of various available social media platforms in anatomy education. We should also consider whether a continuous interaction through social media without physical any approach may influence students 'attitude towards their educators.

Illustrations:

Figure 1:-

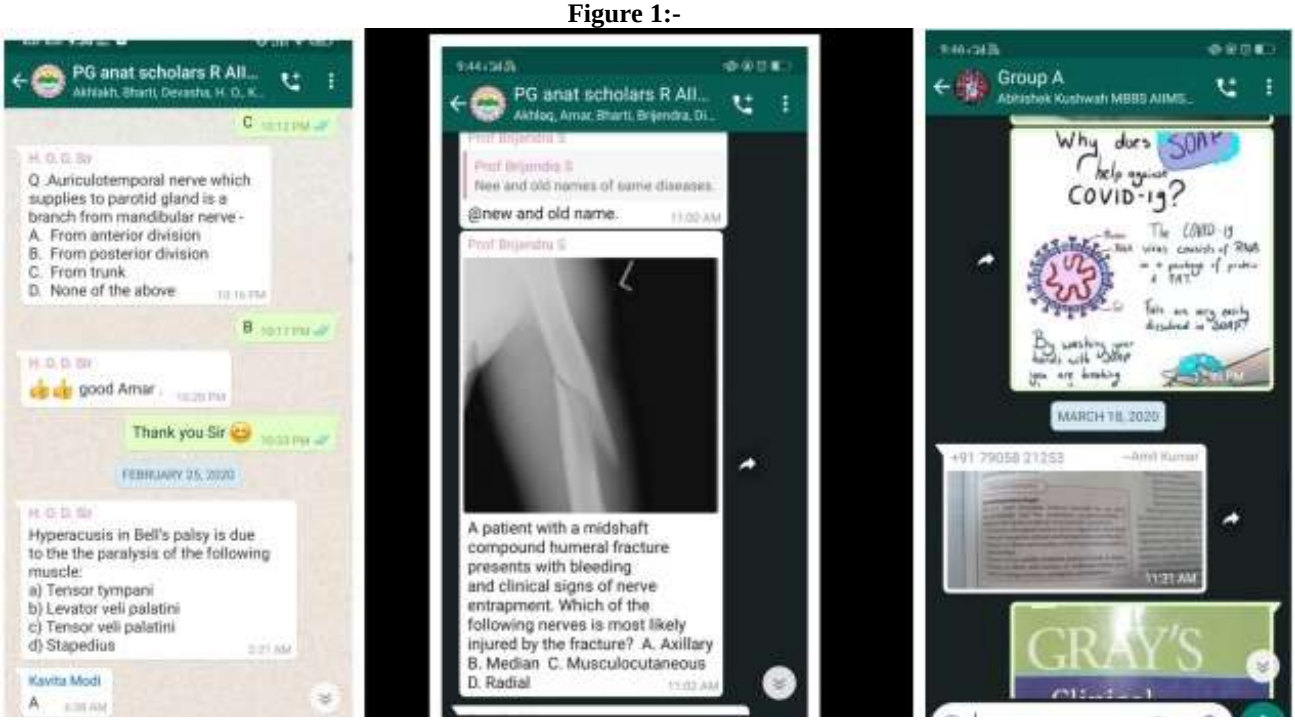
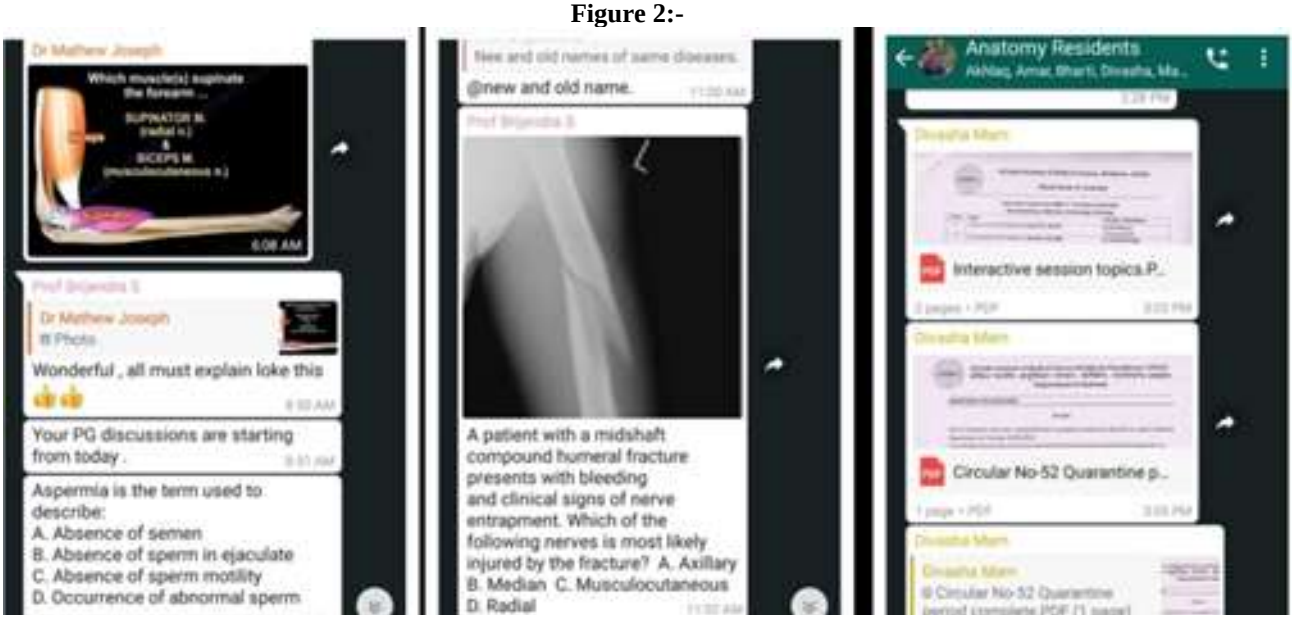


Figure 2:-



Tables:-

Table 1:- Percentage of students responded Yes/No in the questionnaire study.

	Questions	Response "Yes"	Response "No"
1	Do you have a Facebook Account?	75.6	24.4
2	Are you active On Facebook?	39.02	60.98
3	Do you use Facebook for Learning Purposes?	21.34	78.66
4	Do you use Facebook for Learning Anatomy?	11.59	88.41
5	Do you have a YouTube(Google) Account?	94.51	5.49
6	Are you active On YouTube(Google)?	86.59	13.41
7	Do you use YouTube for Learning Purposes?	93.9	6.1
8	Do you use YouTube for Learning Anatomy?	81.71	18.29
9	Do you have a Twitter Account?	37.2	62.8
10	Are you active On Twitter?	10.98	89.02
11	Do you use Twitter for Learning Purposes?	5.49	94.51
12	Do you use Twitter for Learning Anatomy?	3.05	96.95
13	Do you have a Instagram Account?	79.27	20.73
14	Are you active On Instagram?	68.9	31.1
15	Do you use Instagram for Learning Purposes?	47.56	52.44
16	Do you use Instagram for Learning Anatomy?	37.8	62.2
17	Do you have a WhatsApp Account?	99.39	0.61
18	Are you active On WhatsApp?	97.56	2.44
19	Do you use WhatsApp for Learning Purposes?	88.41	11.59
20	Do you use WhatsApp for Learning Anatomy?	72.56	27.44

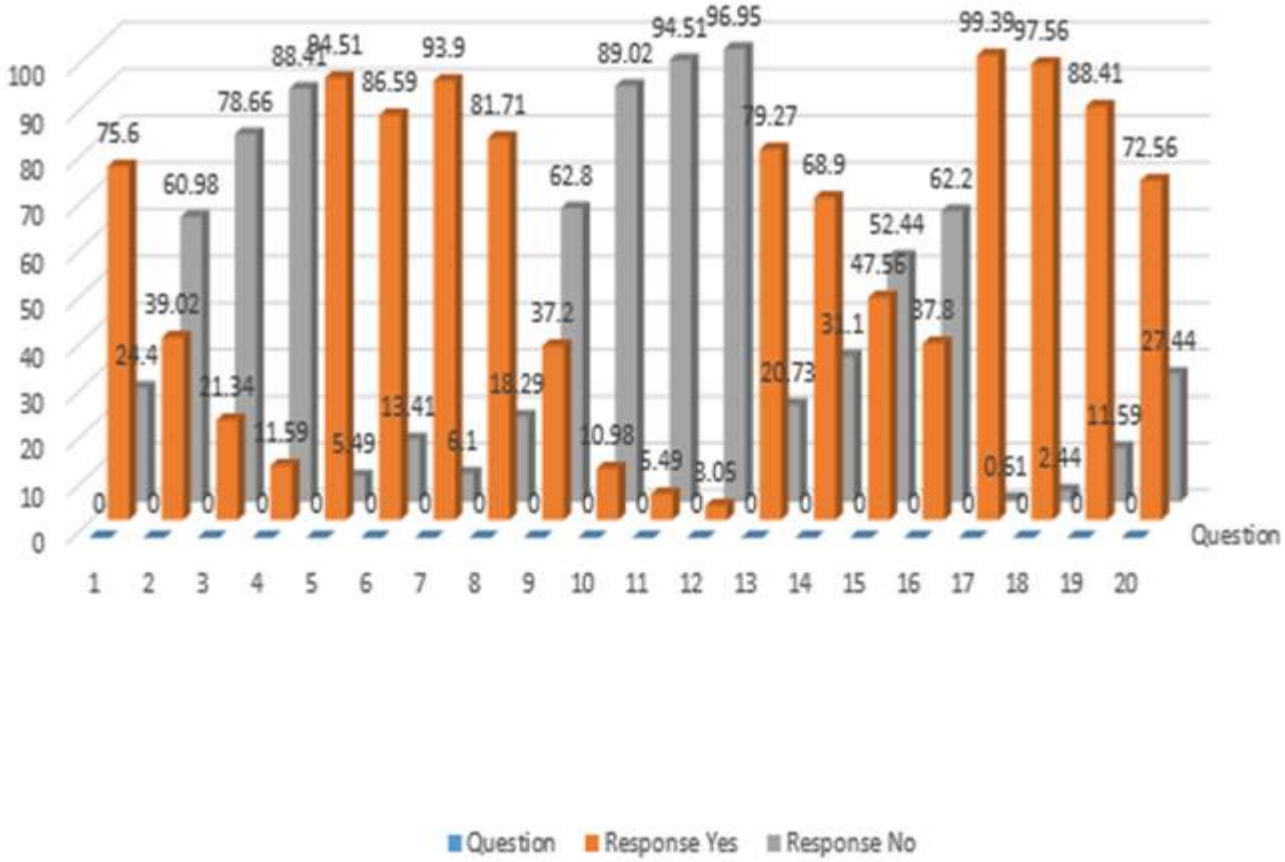
Table 2:- Percentage of students using social media for entertainment and for educational purposes.

Sl N	Social-Media App	Students Using Account	Using for Educational Purposes
1	Facebook	75.6%	21.3%
2	YouTube	94.5%%	93.9%
3	Twitter	37.2%	5.5%
4	Instagram	79.3%	47.6%
5	Whatsapp	99.4%	88.4%

Table 3:- Comparison of results of social media users with non users.

Sl N	Social-Media App	Percentage of Social Media App Users with >60% Marks	Percentage of Social Media App Users with 50-60% Marks	Percentage of Social Media App Users with <50% Marks
1	Facebook	78.0%	22.0%	Nil
2	YouTube	81.0%	18.0%	1.0%
3	Twitter	60.0%	40.0%	Nil
4	Instagram	76.0%	24.0%	Nil
5	Whatsapp	82.0%	17.0%	1.0%

Bar Diagram 1:- Percentage of students responded Yes/No in the questionnaire study.



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