

Role of Social Media in Medical Education – A Peep into the Pre-Covid 19 Scenario

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ABSTRACT

Introduction: The platforms developed by social media are valued tools for educational purposes. However there is a lack of indigenous data especially in the Pre-COVID-19 situation that would give a glimpse of social media usage for educational purposes in Pakistan.

Objective: To determine the awareness and frequency of use of social media for educational purposes by medical students and faculty in the Pre-COVID-19 period.

Materials & Methods: It was a mixed method study comprising of self-constructed questionnaire, with closed ended questions for quantitative study and open ended questions for qualitative study. The study was carried out in Fazaia Medical College, Air University Islamabad, Pakistan over a period of 6 months (August 2018 to Jan 2019). Third year medical students and medical faculty participated in the study. Formal permission of the Institutional Review Board Bioethical Committee was obtained.

Results: Ninety eight percent (70/71) students used social media for their educational purposes, 97% (69/71) & 77% (55/71) students believed that social media platforms increased their knowledge & skills respectively, 37% students (26/71) expressed time constraints with respect to use of social media in educational sphere, however 100% (28/28) faculty members were well aware of use of social media in medical education, whereas 60% (17/28) had time constraints, regarding the use of social media for education purposes. Themes and subthemes were derived from qualitative data and presented in a tabulated form.

Conclusion: Use of social media in medical education is a challenging task for institutes and facilitators that requires adaptation.

MeSH words: Social media, Medical Education, Perception.

Introduction

Both locally and abroad web-based learning is in vogue at many medical institutions. This learning modality is also termed as e-learning. During the last decade the use of social media has exponentially increased. Moreover it has also been getting better as an e-learning educational platform¹. For learning, the social media platforms are being adopted as valued tools. As an innovation technology, the medical schools of many developed countries have progressively incorporated social media in their institutional learning and teaching methodologies².

The case of use of social media applications, along with growing popularity, have become an attractive teaching resource in developed regions like USA, UK and other European countries¹. With almost universal Wi-Fi connectivity, the access to social media is available through smart phones, tablets and laptops easily. This is helpful to both medical students and faculty for sharing of medical knowledge that is not space and time bound³. The health professions and the professionals are the main beneficiaries of adaptation of social media as a tool for improved communication between students and faculty^{4,5}. In recent years there have been concerted efforts to blend the social media as an educational tool in health sciences. Social media application like Facebook, Twitter and Instagram are in daily use of today's medical students and practitioners. They play a vital role in imparting medical knowledge⁶.

Though published research is available in the developed world regarding the use of social media as

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an educational tool. Still however, there exists a visible gap about the awareness and frequency of social media usage as an educational tool in health sciences students and faculty, in a resource constrained country like Pakistan.

The data collected by this research will help in sensitizing medical educationists for adapting to different online teaching media. It will also help policy makers in rationalizing the use of different online teaching modalities in addition to traditional teaching tools.

Objectives:

1. To explore the perceptions of faculty members and medical students regarding use of social media as an effective educational tool.
2. To determine the frequency of social media usage by faculty members and medical students for educational purposes.

Materials and Methods

It was a mixed method study. Self-constructed questionnaires were used to collect the data. The questionnaire comprised of close-ended items for categorical data (12 items for faculty and 08 items for students), which was tested by three subject specialists for internal consistency. Three open ended items were used for qualitative data and replies were recorded in written and audio recording forms. Questionnaires were drafted in English language and the discussion was also carried out in same. The study was carried out in Fazaia Medical College, Air University, Islamabad, from August 2018 to January 2019. For quantitative data, 71 third year medical students and 28 faculty members participated in the study. For qualitative data, 20 participants (10 third year MBBS students and 10 faculty members, including Professors, Associate Professors and Assistant Professors) were interviewed in depth and their responses were recorded. Sampling technique used was Convenience sampling.

For data collection, one to one interviews were carried out, by the principal investigator. The participants were explained the objectives of the study. The participants were provided questionnaire to reply as a written document (categorical data tabulated as Table I & II), this was followed by written reply to 03 open ended items and audio recording of the perceptions of the students & faculty were guided by following questions:

1. How social media can be used as an effective educational tool?
2. Why social media carries importance as an educational platform?
3. Does social media use carry disadvantages for use in education?

All the participants gave their informed written consent. Under taking and assurance was given to the participants regarding securities of information, anonymity and confidentiality. The participants were also informed that there will be no reward or payment given to them for their participation. The permission from Institutional Review Board (IRB) of Fazaia Medical College was taken. Extensive literature search was done before formulating the questionnaire, the main area of interest that were pertinent to this research were identified and the items were framed accordingly. The areas were explored in further detail to find the answer to the study research questions. To enhance the research quality, ahead of face to face interviews, a logical sequence was given to the items. Validation of data collection tool was done following review by three medical education experts. The standardization of questionnaire was done by conducting pilot interviews with 3 medical student and 3 faculty members. The research questions and tools were aligned, followed by deductive coding and thematic analysis. Triangulation was done by taking notes, member checking and interviewee comparison.

Inclusion Criteria:

Pre-training of interviewees was done to minimize interviewer bias.

Exclusion Criteria:

- Students who were absent at the time of data collection were excluded from study.
- Faculty members who had done CHPE course and had previous knowledge about contemporary teaching modalities were excluded.

The data was collected in written form for the questions. The "Yes or No" format was used for responses. The data was analyzed using SPSS 23. Percentages and frequencies were calculated for the answers given to the closed-ended dichotomous items. The responses to the 3 open ended items were transcribed verbatim and recorded both in writing and audio forms. For open ended items, the participant responses were categorized into themes based upon the strengths and weaknesses of social media value as an educational tool.

Results

Categorical Data Results:

Seventy one students were included in this study, 17(24%) were male and 54(76%) were females. Their age ranged 18- 23 years. Out of 71, 31(44%) students belonged to Federal capital, 34(48%) students were from the province Punjab, 4 from Khyber Pakhtunkhwa & 1 from Sindh. The responses of students for the questions are summarized in Table-I.

TABLE I: Frequency of students responding to different questions

Students Responses for Quantitative Study (n=71)		
QUESTIONS	YES	NO
Q1. Are you aware of using social media platforms for educational purposes?	71 (100%)	0 (0%)
Q2. Do you use social media platforms for educational purposes?	70 (99%)	01 (1%)
Q3. Have you found social media use effective for improving your knowledge?	69 (97%)	2 (3%)
Q4. Have you found social media use effective for improving your skill?	55 (77.5%)	16 (22.5%)
Q5. Do you have any time constraints w.r.t use of social media as a learning tool?	26 (37%)	45 (63%)
Q6. Do you consider social media as an important modality in your learning?	64 (90%)	7 (10%)
Q7. Is there any on campus availability of social media, which can be used for educational purposes?	27 (38%)	44 (62%)
Q8. Have you ever complained about the lack of open access, on campus social media to the faculty or administration?	23 (32%)	48 (68%)

The faculty age ranged 25 to 61 years and included all levels of faculty members ranging from demonstrators to professors and head of departments. Most of the faculty members i.e. 7/28 (25%) age ranged: 30-39 years, followed by 5/28(18%) faculty members age ranged: 40-49 years. The responses of faculty for the questions are summarized in Table II.

Qualitative Data Results:

Regarding the 03 open ended items, 20 participants responded on questionnaires. Their responses were audio recorded. In context of the use of social media as

educational tool these responses were categorized into themes and subthemes. The subthemes under strengths of social media included its value as information source, collaboration & communication with like-minded people, economy for time and ease of its use and availability. The subthemes recognized under weaknesses of social media included impaired time management, health related hazards, reliability and confidentiality issues and reluctance to change and adaptation. These results are summarized as Table III.

TABLE II: Frequency of Faculty Responding to Different Questions

Faculty Responses for Quantitative Study (n=28)		
QUESTIONS	YES	NO
Q1. Are you aware of using social media platforms for educational purposes?	28 (100%)	0 (0%)
Q2. Do you use social media platforms for educational purposes?	28 (100%)	0 (0%)
Q3. Have you found social media use effective for imparting knowledge and skill to the students?	27 (96%)	1 (4%)
Q4. Do you have any time constraints w.r.t use of social media as an educational tool?	11 (39%)	17 (61%)
Q5. Do you have any human resource constraints w.r.t use of social media as an educational tool?	4 (14%)	24 (86%)
Q6. Do you consider social media as an important modality in your teaching methodology?	22(79%)	6 (21%)
Q7. Is there any departmental policy for use of social media for educational purposes?	1 (4%)	27 (96%)
Q8. Is there any medical college policy for use of social media for educational purposes?	0 (0%)	28 (100%)
Q9. Is there any university policy for use of social media for educational purposes?	1 (4%)	27 (96%)
Q10. Do you think any such policy should be in practice, considering digital age advancements?	24 (86%)	4 (14%)
Q11. As a facilitator have you ever asked students regarding availability of on campus social media	10 (36%)	18 (64%)
Q12. As a facilitator have you asked students regarding availability of on campus social media	6 (21%)	22 (79%)

TABLE-III: Results of Qualitative Data

S.No.	Themes	Subthemes	Representative Narratives of Participants
1.	Strengths of social media as educational tool	Valuable information source	-Social media provides an effective source of educational material -Social media is effective for clearing of concepts through videos and online repositories -Social media serves as database of information posted once, that can be used later -`Unlimited knowledge and resources at finger tips
		Communication and collaboration	-Dedicated study groups allow interactive discussion and detailed problem solving -There is rapid sharing of files including lectures, pictures, notes and study material -Provides forums for teacher to students and student to student interaction -Allows interaction between people across the globe and encourages discussion and diverse approaches Interactive learning and sharing of knowledge
		Time economy	-Sharing of resources is done rapidly -Most convenient and fast method of information -Saves time`
		Availability of technology on the go	-Easily accessible -Important because generation today spends 90% of their time on social media and everyone has gadgets like tablets and mobiles -Cheaper and readily available
2.	Weaknesses of social media as educational tool	Impaired time management	-Students waste their precious time in distractions like games, Facebook and YouTube etc. -Subversion of higher order reasoning processes required for critical thinking and intellectual development -Lots of distractions and time consuming
		Health hazards	-Effects health, eyesight and mental abilities if used for a prolonged period of time -Reduces and disturbs sleep and causes hyperactive behavior -Causes depression, anxiety and loneliness -Impulsivity, less patience, less tenacity and weaker critical thinking skills
		Reliability and confidentiality issues	-Students should be educated for issues of security, confidentiality and privacy for use of social media in education -Piracy issues for original work -Policies should be devised for regulation of information disseminated to public -Every information available on net is not authentic and needs to be verified
		Reluctance to change and adapt	-Older teachers are reluctant to change and to use social media -Many people are not well versed with and fear the use of latest technology

Discussion

Social media is defined by Wikipedia as `primarily internet-based tools for sharing and discussing information among human beings`. Such networking sites create platforms for chatting, sharing information in the form of files and emails, creating and exchanging content and discussing thoughts & ideas². These platforms act as tools to assist people staying linked with their loved ones³. Currently, the

widespread social networking communities include Facebook, Twitter, MySpace, LinkedIn, Google+, YouTube, and many more are coming up. Studies done abroad have proved that the tools provided by social media have the capability to prolong student-teacher and student-student exposure; this was made possible via feedbacks, group interactions, discussions and co-production⁴. Medical educators can use these tools to exhibit their students towards diverse groups around the world and health related messages can be

spread across a broad range of audience⁵. Regarding the usage of social media as an educational tool there is much published data available from the western world. However, there is a scarcity of similar data in Pakistan and rest of the developing countries. One of the global reasons for this gap is that innovative technologies evolve but there are very few early adopters⁶. However new technologies require adequate validation about their robustness that the same can be used for educational purposes⁷. These affirmations help to dispel the doubts regarding the use of new technologies for achieving the desired educational outcomes⁵. Use of social media in medical education by trained experts also provides opportunities for innovative teaching and engagement of students even beyond the traditional classroom environment. In our study, majority of the students revealed that they were well aware about the utility of social media platforms like Facebook, WhatsApp and YouTube. Moreover, they were also routinely using these platforms for self-education and augmenting the traditional methods of education. Furthermore medical teachers, were also acquainted with the use of social media platforms for education and most of them used these as well. Both the teachers and the students opined that social media platforms were good tools for improving knowledge and skills of students and therefore contemplated these as effective tools for teaching methodologies. Published studies confirmed the role of these tools provided by social media that they were pivotal to bring a positive impact on student knowledge and skill. The same could possibly be achieved through active engagement, feedback and collaboration of students during their process of learning⁷. Similarly, research conducted in North America, deduced that the regular teaching and learning activities carried out on one on one basis in a traditional class room can be replaced by various social media platforms⁸. In our study many teachers perceived that the time resource constraints hampered the use of social media platforms for education in their traditional teaching settings, however, published data revealed that the preceding generations had to strive a lot to be a part of population that used social media⁹. Besides, teachers are required to put in extra time to learn and manage new technologies. However >50% of these believed that it could be hard for them to manage these platform¹⁰. Many studies had also evaluated the disadvantages associated with the social media in medical education and reckoned for its confidentiality and privacy related issues^{5,11,12}. Majority of students and faculty members in our study

were unaware about local institutional policies regarding social media use and, that many websites were unavailable on campus for one reason or another. Published data emphasizes that different barriers could also restrict the incorporation of social media tools in medical education. The factors that hamper the use of social media platforms for educational purposes could be high cost for purchase and annual subscription, time slots, economy related paradigms and inadequate cyber and logistical infrastructure¹³. Of the several strengths of social media use in education, few important ones included availability of valuable information resources and collaborative tools that can be used in academics. Universities are utilizing social media in education which has proven to enhance student's access to educational resources and enrich their learning experience through a variety of data resources¹⁴. The other exciting advantage of social media in education is to learn while having an opportunity to collaborate and interact with the experts¹⁵. This gives a supporting environment to the users to find solutions to their relatable concerns. The major disadvantages highlighted in this study included health hazards, problems in time management and reliability of information. Health hazards have been associated with the excessive use of social media¹⁶. It includes evidence linked poor quality of sleep, development of negative behaviors and attitudes and a probable increased incidence of anxiety and depression¹⁷. Time management is a big issue, which was highlighted by the medical students themselves, since many were not able to concentrate on academic activities and indulged in time wastage¹⁸. Proper time management workshops can help in dealing such issues. Another significant drawback was related to possible provision of unreliable and poor quality information, since the educational resources may be unreferenced, piecemeal and not current and some could have a negative impact¹⁹. However this issue could be easily solved by providing students guidance for desired quality information, updated and peer reviewed educational resources having a favorable initiative for commencement of academic skills and positive attitudes towards their professional growth. Many studies carried out in the West have given similar results, thus supporting the qualitative results of this study emphasizing the strengths and weaknesses of the utility of social media platforms in medical education. ^{20,21}

Conclusion

Use of social media platforms and various websites / links for educating medical students is surely on an emerging area having tremendous potential. Social media provides collaborative and concerted platforms for shared and two-way communication, which has a vast prospective when it comes to medical education. Foreign institutes have already realized the endless possibilities of social media platforms and its uses for education. They are adequately equipped and ready to clinch the revolution associated with its use²¹. Facilitators might encounter challenges adapting to this change, however, there are prospects for novelty & improvement that can be tailored according to local needs and indigenous requirements. Moreover, Institutes need to provide adequate technological infrastructure and related improvements for the educators as well as students in order to achieve the challenge. Facilitators need requisite training to keep up to date with the latest technologies that can effectively improve the learning process of students. The facilitators need to take the responsibility for educating their students about the security and privacy issues related to information posting online about personal information. The review of institutional and national educational/ cyber policies is imperative to manage the barriers for academic use of these platforms. This has become even more important, especially in light of current digitalization of information and its potential usage.

Strengths of Study:

1. The awareness of students and faculty regarding value and significance of social media as a teaching and learning tool in medical education was highlighted.
2. It also underscored the factors that hamper and pose restraints towards the utility of social media for academic purposes.
3. It emphasized the need to adapt for change, both at faculty as well as institutional level, which can be used for effective learning and teaching processes.
4. This study also signified preparedness of both faculty and students, in case the use of social media option becomes the main method of instruction in some global or local crisis.

Limitations of Study:

1. The study was carried out with the undergraduate medical students of 3rd year MBBS and Basic

Sciences faculty. The clinical sciences faculty didn't participate in the study and therefore sample number appeared inadequate.

2. The study population was affiliated to a private sector institute and sample size was also limited.

Comparative studies between social media platforms and perceptions of medical students to achieve the educational objective can be further explored in the post pandemic period and compared with the current study data. Moreover, determination of factors that hamper or enhance participants learning could be another area of exploration. Sample size and sample profile can be enhanced to enrich the results.

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