Humanities and Social Sciences Letters
2025 Vol. 13, No. 4, pp. 1269-1286
ISSN(e): 2312-4318
ISSN(p): 2312-5659
DOI: 10.18488/73.v13i4.4493

Awareness, perceptions, and use of social networking sites in education and patient management: An intervention study among health science faculty

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Article History
Received: 7 April 2025
Revised: 29 August 2025
Accepted: 26 September 2025
Published: 24 October 2025

Keywords
Faculty members
Medical education
Patient management
Social networking sites.

ABSTRACT

This study was conducted to assess the effectiveness of a workshop in improving awareness, perceptions, and practices related to the use of social networking sites (SNSs) for educational purposes and patient management among faculty members. It was a quasi-experimental study involving 35 faculty members who participated in the workshop. After collecting baseline data on self-perceived knowledge, perceptions, and practices through a pretest questionnaire, an intervention in the form of a workshop was conducted. Following the workshop, self-perceived knowledge was reassessed via a posttest questionnaire. The participants were contacted after six months to inquire about their SNS usage practices. Differences between pre- and posttest scores were analyzed using the Wilcoxon signed-rank test. Before the workshop, 18 participants used SNSs for educational purposes, and 19 used SNSs for patient management. SNSs were used more frequently for educational purposes among participants aged ≤50 years (P=0.0275). It was used for patient management by a greater proportion of male participants (P=0.028). The participants showed an increase in self-perceived knowledge (P<0.001) after the workshop. Thirty participants strongly agreed or agreed with the need for more such training programs. Faculty members from the Departments of Radiodiagnosis, Orthopaedics, and Radiation Oncology used SNSs for educational purposes, patient management, or both following this workshop. It can therefore be concluded that this workshop effectively improved participants' self-perceived knowledge of the application of SNSs for educational purposes. More such workshops involving SNSs need to be conducted among health science faculty members.

Contribution/Originality: This study discovered how a three-hour workshop involving SNSs can be used to train health science faculty members effectively for their application in academic purposes and patient care. Improvements in their awareness, perceptions, and practices were noticeable over time. This supports the need for more such workshops at medical colleges.

1. INTRODUCTION

Social network sites (SNSs) are web-based services that create profiles, build networks, and share ideas and information with others (Boyd & Ellison, 2007). These platforms also bring together like-minded people and engage

them in online discussions in real time on topics that interest them (Hillman & Sherbino, 2015). Medical students of the current generation use social networking sites extensively as a medium of communication and creativity, facilitating engagement, self-reflection, and active learning (Davis, Ho, & Last, 2015). Healthcare professionals are also using these platforms to engage in online discussions with their peers to increase their knowledge and skills (Guckian et al., 2021; Ventola, 2014). The proportion of faculty members using SNSs for educational purposes has increased over the years (Lederman, 2012; Rogers, 2013). This was particularly apparent during the COVID-19 pandemic (Katz & Nandi, 2021). This indicates the popularity of SNSs as educational platforms among both medical students and healthcare professionals.

SNSs could also address certain problems faced by faculty members of medical colleges, such as not attending faculty development programmes (FDPs) meant to improve their teaching skills. The reasons for not attending training centers include a shortage of time, distance from the training center, and the feeling that the teaching profession has lacked recognition and financial reward. To overcome these problems, these faculty members suggested the need for institutional support in the form of educational tools to conduct training programmes, which also included online resources (Steinert et al., 2009). Hence, it is not surprising that 16.7% of medical schools in the USA and Canada use social networking sites to organize faculty development programs (Cahn, Benjamin, & Shanahan, 2013).

However, the use of SNSs for educational activities has limitations. There can be breaches in the confidentiality of information. Anyone can access anything written on these sites. Numerous copyright issues concerning the content posted for readers on these platforms exist. George, Rovniak, and Kraschnewski (2013) reported that the information shared on these platforms may be misleading or incorrect.

Rogers-Estable (2014), in a study conducted among faculty members of higher education at three western US universities reported that extrinsic factors, such as lack of training, time, and support, were the main barriers compared to intrinsic factors, such as beliefs and motivation for the use of SNSs for educational purposes. Similarly, in another study by Ahmed, AbdelAlmuniem, and Almabhouh (2016), among university faculty members of the College of Education at the Sudan University of Science and Technology, the participants stated that the lack of training courses on how to use SNSs in teaching was the main barrier to their usage. This indicates the need for periodic training among faculty members to apply SNSs for medical education. Therefore, training programs are essential to enhance awareness and skills required for healthcare professionals to use SNSs for educational purposes.

This study aimed to assess the effectiveness of a workshop in improving awareness of the application of SNSs for education among faculty members. It was also used to evaluate their perceptions of and practices related to the use of SNSs for education and patient management.

2. METHODS

2.1. Study Design

This was a quasi-experimental study conducted following a training intervention in the form of a three-hour onsite workshop on "Social Media and Medical Education," held in September 2022.

2.2. Study Participants

The study population comprised faculty members of various health sciences courses at Kasturba Medical College, Mangalore, a constituent institution of Manipal Academy of Higher Education, Manipal, India.

The faculty members involved in the Bachelor of Medicine and Bachelor of Surgery course, along with its corresponding Master's program, were from the Departments of Anaesthesiology, Orthopaedics, Internal Medicine, Obstetrics and Gynaecology, Surgery, Radiation Oncology, Paediatrics, Otorhinolaryngology, Emergency Medicine, Radiodiagnosis, Pathology, Microbiology, Pharmacology, Community Medicine, Anatomy, and Biochemistry.

There was also one faculty member who was part of the course on Bachelor of Science in Audiology and Speech-Language Pathology and its corresponding Master's program from the Department of Audiology and Speech-Language Pathology at Kasturba Medical College, Mangalore.

The sample population consisted of all participants in this workshop and was enrolled via the convenience sampling method. The inclusion criterion was being a faculty member of this teaching institution, and the exclusion criterion was non-consent to participate in the research study. All participants in this workshop provided informed consent to participate in the study. Both facilitators of this workshop were experienced users of SNSs in medical education and monitored hands-on activities during the workshop. Approval to conduct the study as part of this workshop was obtained from the Institutional Ethics Committee (IEC). The IEC comprised a multidisciplinary panel of doctors (a pediatrician, a surgeon, a psychiatrist, a microbiologist, a dermatologist, a pharmacologist, and two community physicians), a biostatistician, an advocate, a social scientist, a nongovernmental organization representative, and a layperson. The protocol number was IEC KMC MLR 08/2022/326, and it was approved by the IEC panel on 17th August 2022. The questions raised by the IEC panel included the study universe of the participants, whether the universe was a heterogeneous group, and the definition of health science courses. These questions were answered by the principal investigator.

Researchers planned to provide training on the usage of SNSs, namely Zoom, WhatsApp, YouTube, Twitter, Facebook, and Podcasts, for educational purposes as part of this workshop.

Before the start of the workshop, a one-week pre-workshop training was provided to all participants via email correspondence. The facilitators also created a WhatsApp group for all participants.

2.3. Preworkshop Training Details

On the first day, all participants new to YouTube, Twitter, and Facebook were instructed to create accounts.

Participants were asked to create a skill demonstration video related to their specialty for at least two minutes. They were instructed to record the video using their mobile phone camera or various screen recording tools available on their personal computers (PCs). Participants were advised to perform a running commentary simultaneously during the video recording of the procedure. The video was to be prepared in a way that students (undergraduates or postgraduates) could learn the skill by watching and listening to the step-by-step commentary. For participants unfamiliar with the available screen recording tools on PCs, a ten-minute instructional video prepared by the facilitators on "How to screen record" using platforms such as Zoom or Xbox Game Bar (shortcut key: Windows + G) was shared with them.

On day two, a Word document with certain essential features related to WhatsApp that can be used for educational purposes was shared with the participants for practice. This included assignments such as creating a WhatsApp group and sending invites to join, using WhatsApp Web to view WhatsApp messages on the laptop, editing and sending voice messages, converting educational videos into GIFs (which can be used for reinforcing concepts among learners), and correcting assignments. The participants were also instructed to become familiar with broadcasting messages that help them send reminders to students, how to assign notification tones to messages, how to retrieve links of received documents, how to mute notifications, how to turn off media visibility, the importance of starred messages and disappearing messages, and how to enable the "administrators only" message function. The participants were further advised to explore ways through which each of these features can be used to strengthen classroom teaching and learning.

They were also encouraged to download at least two research studies related to the application of WhatsApp features for teaching and learning purposes in their specialty from the internet.

On day three, the participants were asked to edit their skill videos and add subtitles to them via the YouTube platform. An explanatory video prepared by the facilitators was shared with the participants to guide them through this process. The footage contained information about some key features available on YouTube that can be applied to

classroom teaching. This included the use of shortcut key functions such as "0" to rewind a video, "p" to make the video play in full screen, turning on the autoplay option, adjusting the playback speed and video resolution, looping a video to replay, displaying subtitles, and the transcript of the videos. The procedure for saving the video in YouTube Studio to trim it and share it with others was also discussed. For self-created videos, the pathway for downloading voice transcripts in a Microsoft Word document and adding these transcripts to the YouTube video as subtitles synchronized with presentation slides, as well as how to share this edited video with students and make its visibility public, was also covered. Additionally, the pathway for disabling the option to allow others to edit self-prepared videos in the public domain was discussed. Information on the Video Editor tool and how it can be used to make further edits to self-prepared videos, such as adding instruction slides and acknowledgment slides, was shared with the participants via a downloaded YouTube video.

On the fourth day, an orientation on essential features of Twitter that can be used for educational purposes was shared with the participants. An article containing information about these features was posted. A tutorial video, prepared by the facilitators, demonstrated the tabs and options, chat groups, Twitter circles, the process of sharing content with others, tagging, the use of '#', and the creation and modification of posts on Twitter.

On day five, two podcast episodes self-created by the facilitators were posted. The first episode provided information on the origin and evolution of podcasts. It also offered guidance on how to create and edit a podcast. The second episode involved orienting participants on how to apply podcasts in medical education. Some essential instructions for the upcoming workshop were also included in this episode.

On day six, a video clip prepared by the facilitators on essential features of Facebook that can be used for educational purposes was shared with the participants. Information regarding how to create a new Facebook group, how to make this group public or private, how to invite members to join, how to add an event to this group, how to go live on Facebook during the event, how to create a poll question on the timeline of the events page, how to create breakout rooms during the event, how to cancel or edit the event, and finally, how to dissolve the group if required, was included in this video.

A Facebook discussion group titled "Social Media & Medical Education" was created for the benefit of the participants, and a request to join the group was posted to all participants. The participants were also instructed to download two research studies from the internet on the use of Facebook for teaching medical students.

Day seven and the final day of the pre-workshop training was a self-directed learning session. Here, participants were encouraged to explore any two SNSs (for example, Instagram or LinkedIn) that had not been discussed so far and how these could be used for medical education. They were asked to consult literature reviews and videos available online to familiarize themselves with their applications. The instructions for the workshop, such as the need to obtain research articles on the usage of SNSs like Facebook, WhatsApp, and Twitter, as well as the requirement to create accounts on YouTube, Facebook, and Twitter, and to bring a fully charged laptop for the workshop, were also reiterated to all participants.

2.4. Workshop Training Details

The workshop began with participants introducing themselves. They were asked to reveal their virtual names used on various SNSs. Additionally, they were requested to complete the pretest questionnaire. This ice-breaking session lasted for 20 minutes.

The next session was an interactive lecture lasting 20 minutes, during which PowerPoint slides were used to define and classify various SNSs.

This was followed by a hands-on exercise session on the application of YouTube for educational purposes that lasted for 20 minutes. Here, the participants were instructed to practice all the skills outlined in the pre-workshop video. They were also guided in posting their self-prepared videos online and disseminating them to their students.

This session was followed by a hands-on exercise involving the application of WhatsApp for educational purposes for 20 minutes. A question, "What are the general rules to be followed while using the WhatsApp platform for teaching students?", was posted to the participants. The participants were instructed to post their answers in the WhatsApp group created before the start of the workshop. Their responses were displayed on the LCD screen via the WhatsApp Web feature. A second question, "In what ways can WhatsApp be used in medical education?", was then posed to the participants. They were instructed to answer similarly in the WhatsApp group and to support their views with posts of relevant research studies.

The subsequent 30-minute session involved using Twitter for educational purposes. The session included a synopsis of the basics of Twitter, a demonstration of the pathway for the formation of a Twitter circle, a Twitter deck, the use of the "#" symbol, and the creation and publication of posts. Then, practice activities included following their tablemates, creating a Twitter circle with them, organizing their deck using a Twitter deck, creating a clinical pearl of their specialty along with snippets and appropriate digital photographs, and sharing it in the newly created Twitter circle. Participants were also asked to create a poll on Twitter, post it in their Twitter circle, and tag specific individuals in the circle.

This was followed by a hands-on activity lasting 25 minutes on the application of podcasts in medical education. The participants were first introduced to various types of podcasts through PowerPoint slides for five minutes. They were then tasked with creating a podcast using www.buzzsprout.com. In this activity, three participants from each table volunteered. One of them selected a specific disease related to their specialty. The second person was asked to interview the first regarding clinical features, risk factors, treatment, and prevention of the condition. The third person recorded the entire interview on their smartphone. The remaining participants at the table had to create a podcast episode covering the entire "health talk".

The next session involved a hands-on activity on the application of Facebook in medical education for 20 minutes. A poll question, "Do you think SNSs are useful in medical education?", was posted on the events page of the Facebook group "Social Media & Medical Education." Additionally, on the timeline of this page, participants were invited to share their prior experiences of using SNSs for educational purposes and to discuss their positive and negative experiences. A demonstration of "Facebook Live" was then presented by the facilitators on this page, who delivered the vote of thanks.

The day's final session was a brainstorming session on the advantages and disadvantages of using SNSs for educational purposes, which lasted for 10 minutes.

2.5. Study Instruments

The pre- and post-test questionnaires used in this study are placed in the Appendix. The study instruments were prepared by the investigators with the help of a literature review.

The first section of the pretest questionnaire inquired about the sociodemographic details of the participants, including their professional background, the type of SNSs used, and details of similar training programs they had attended in the past. The second section inquired about their practices regarding prior usage of SNSs for teaching undergraduate or postgraduate students and the benefits experienced by the students. All participants were also asked about their perceptions of the advantages and disadvantages of using SNSs for medical education. The third section inquired about their practices regarding prior usage of SNSs for patient management. Participants were asked about their perceptions of the advantages and disadvantages of using SNSs for patient management and the need for more such training programs.

The last part of the pretest questionnaire asked about the participants' self-perceived knowledge of using SNSs for educational purposes before taking part in the preworkshop training period, on a scale of zero to ten points. To link the pre- and posttest questionnaires, each participant was instructed to fill in a five-digit Arabic numeral of their choice, the same number in both forms. To minimize the chances of repetition of the number chosen by the

participants, they were instructed to use a numeric sequence without repetition of the same digit throughout or to avoid sequential numbers.

The posttest questionnaire asked participants about their self-perceived knowledge of using SNSs for educational purposes after attending the workshop, rated on a scale from zero to ten points.

The participants were again asked to write the same five-digit Arabic number stated in the pretest questionnaire.

The feedback form was the final part of the posttest questionnaire and is also included in the Appendix. Feedback regarding the workshop on various parameters, including content and delivery of the talk, explanations provided, use of audiovisual aids, interactivity, and the quality of resource materials shared before the workshop, was recorded on a five-point Likert scale.

The ratings on this scale were "poor, average, good, very good, and excellent," with points awarded from one to five. Participants rated the usefulness of the hands-on exercises during the workshop as "not useful, less useful, somewhat useful, useful, and very useful," with scores from one to five. Feedback on the time allocated for the hands-on exercises and the overall pacing of the program was rated on a scale of "too slow and too fast," each being awarded one point, and "just right" was awarded two points. Participants were also asked to suggest the names of any other SNSs that could have been covered in this workshop. Additionally, they were invited to share any open suggestions or feedback regarding the workshop at the end.

Two experts in medical education performed content validation of the data collection tools. The printouts of the pre-and post-test questionnaires and the feedback form were given to them, and they wrote their responses/suggestions on these forms. Pilot testing of the tools was conducted among three faculty members from the Department of Community Medicine at this institution who were not participants in this workshop.

They were chosen non-randomly. They suggested the addition of filter questions wherever applicable in the pretest questionnaire.

2.6. Study Procedure

The pre- and post-test questionnaires were anonymous, and they were handed over to the participants to fill out before and after the workshop, respectively. The participant information sheet and the consent form were included in the initial part of the pre-test questionnaire.

The pre-test questionnaire took approximately 10 minutes to complete. The post-test questionnaire and the feedback form were completed in the last 15 minutes before the conclusion of this workshop.

The participants were followed up via email six months after the workshop (in the first week of April 2023) to determine whether they had applied any SNSs for educational purposes.

2.7. Data Analysis

IBM SPSS for Windows (version 25.0; Armonk, New York) was used for data entry and analysis. The Kolmogorov–Smirnov test was used to assess the normality of the self-perceived knowledge scores of the participants. Descriptive statistics are expressed as proportions, medians, and interquartile ranges. The Chi-square test, Fisher's exact test, and Wilcoxon signed-rank test were used to examine associations. A P-value of less than 0.05 was considered statistically significant.

3. RESULTS

A total of 35 participants registered for this workshop, all of whom attended and consented to participate in the research study. The response rate was therefore 100%.

The mean age of the participants was 41.6±11.7 years. The ages ranged from 24 to 64 years, and the mean teaching experience after graduation was 12.9±10.6 years.

The median teaching experience was 11 years (interquartile range 3.5-20), with a range from three months to 34 years (Table 1).

Table 1. Sociodemographic information of the study participants.

Characteristics	Number	Percentage
Age group (years)		
21-30	9	25.7
31-40	11	31.4
41-50	5	14.3
51-60	7	20.0
>60	3	8.6
Gender		
Males	18	51.4
Females	17	48.6
Specialty		
Clinical subjects*	24	68.6
Para-clinical subjects**	8	22.9
Preclinical subjects ***	2	5.7
Allied health sciences****	1	2.8
Designation		
Professor	14	40.0
Additional professor	2	5.7
Associate professor	5	14.3
Assistant professor	5	14.3
Senior resident	6	17.1
Tutor	3	8.6
Teaching experience after graduation (years)		
<1	5	14.3
1-10	12	34.3
11-20	10	28.6
21-30	5	14.3
>30	3	8.5
Total	35	100.0

Note: *Departments of Anaesthesiology 6, Orthopaedics 4, Internal medicine 3, Obstetrics and gynaecology 2, Surgery 2, Radiation oncology 2, Pediatrics 2, Otorhinolaryngology 1, Emergency medicine 1, Radiodiagnosis 1.
**Departments of Pathology 3, Microbiology 2, Pharmacology 2, Community medicine 1.
***Departments of Anatomy 1, Biochemistry 1.
****Department of Audiology and speech language pathology 1.

None of the participants at this workshop had attended any prior training program on the application of SNSs in medical education or for patient management.

The various SNSs used by participants were WhatsApp (35 participants), YouTube (28 participants), Facebook (23 participants), Instagram (18 participants), Twitter (17 participants), Telegram (14 participants), LinkedIn (13 participants), Pinterest (10 participants), Snapchat (4 participants), and Reddit (1 participant). More than half (18 participants) had previously used SNSs for educational purposes.

Among these 18 participants, WhatsApp was used by 15, YouTube by 9, Facebook by 5, Twitter by 4, LinkedIn by 3, and Instagram by 1.

All users reported that SNS was a useful medium for building knowledge about the subject, and 17 reported that it was useful for sharing resource materials when used for educational purposes. However, seven of the nine participants who had used YouTube stated that it was not useful for sharing photographs (Table 2).

Table 2. Social networking sites (SNSs) usage-related characteristics among the participants who had used SNSs for educational purposes (n=18).

SNS usage-related characteristics	WhatsApp n(%)	YouTube n(%)	Facebook n(%)	Twitter n(%)	LinkedIn n(%)	Instagram n(%)
Specify the type of SNS used for educational purposes (n=18)*	15(83.3)	9(50.0)	5(27.8)	4(22.2)	3(16.7)	1(5.5)
Specify the way SNS was useful for undergraduate or postgraduate teaching*	n=15	n=9	n=5	n=4	n=3	n=1
Building knowledge about the subject	14(93.3)	9(100)	4(80)	4(100)	2(66.7)	1(100)
Sharing photographs related to the subject	14(93.3)	9(100)	3(60)	4(100)	2(66.7)	1(100)
Easy to use	14(93.3)	8(88.9)	3(60)	4(100)	2(66.7)	0
Sharing resource materials/literature	14(93.3)	8(88.9)	3(60)	3(75)	1(33.3)	0
Improved problem-solving skills	14(93.3)	7(77.8)	3(60)	4(100)	2(66.7)	0
Sharing videos	13(86.7)	9(100)	3(60)	2(50)	2(66.7)	0
Brought creativity into the learning process	13(86.7)	8(88.9)	3(60)	3(75)	1(33.3)	0
Supported clinical teaching	11(73.3)	8(88.9)	3(60)	4(100)	2(66.7)	0
Stimulated critical thinking	10(66.7)	3(33.3)	1(20)	3(75)	2(66.7)	0
Specify in what aspects SNS was not found to be useful for undergraduate or postgraduate teaching*						
Sharing photographs related to the subject	0	7(77.8)	0	0	0	0
Stimulated critical thinking	0	3(33.3)	0	1(25)	0	0
Brought creativity into the learning process	1(6.7)	2(22.2)	0	1(25)	1(33.3)	0
Easy to use	0	1(11.1)	0	0	0	0
Improved problem-solving skills	0	1(11.1)	0	0	0	0
Supported clinical teaching	2(13.3)	1(11.1)	0	0	0	0
Sharing resource materials/literature	0	1(11.1)	0	1(25)	1(33.3)	0
Building knowledge about the subject	1(6.7)	0	0	0	0	0
Sharing videos	0	0	0	2(50)	0	0

Note: *Multiple responses.

The reasons given for not using SNSs for educational purposes in the past (17 participants) were unfamiliarity with technology (13 participants), lack of awareness of how SNSs can be used for teaching purposes (3 participants), and a belief that they are not required to teach the relevant specialty (1 participant).

Of the 35 participants, 19 had used SNSs for patient management in the past, and among them, 17 had used WhatsApp (Table 3).

Table 3. Social networking sites (SNSs) usage-related characteristics among the participants who had used SNSs for patient management (n=19).

SNS usage-related characteristics	WhatsApp n (%)	Facebook n (%)	Twitter n (%)	LinkedIn n (%)	Instagram n (%)	Reddit n (%)
Specify the type of SNS used for patient management (n=19)*	17(89.5)	3(15.8)	3(15.8)	1(5.3)	1(5.3)	1(5.3)
Specify the way SNS was useful for undergraduate or postgraduate teaching*	n=17	n=3	n=3	n=1	n=1	n=1
Hold patient consultations	4(23.5)		3(100)		1(100)	
Discussion with colleagues about a patient's condition	6(35.3)	1(33.3)		1(100)		1(100)
Sharing patient's laboratory report with colleagues	5(29.4)	1(33.3)				
Sharing patient's X-ray images with colleagues	1(5.9)	1(33.3)				
Sharing patient's ultrasound scan report with colleagues	1(5.9)					

Note: *Multiple responses.

The most common advantage of using SNSs for educational purposes and patient management, as perceived by the participants, was that it was an easy and rapid way to share information with beneficiaries. The most common disadvantage perceived by the participants when SNSs were used for educational purposes was the lack of privacy and confidentiality of the information shared, as well as the ethical and legal issues involved if they were used for patient management (Table 4).

Table 4. Perception of participants towards the use of SNSs for educational purposes and patient care (n=35).

Perception regarding	Number	Percentage
Advantages of using SNSs for educational purposes (n=35)*		
Easy way to share information with students	27	77.1
A quick way to share information with a large group	24	68.6
Promotes teamwork	17	48.6
Enables work from home	16	45.7
Helps to build a relationship within the group	13	37.1
Popular platform among students	1	2.9
Disadvantages of using SNSs for educational purposes (n=35)*		
Lack of privacy and confidentiality of information shared	18	51.4
Ethical and legal issues	15	42.9
Availability of erroneous health information	14	40.0
Requires familiarity with technology for usage	14	40.0
Discussion of patient-based case studies on SNSs may not be a serious discussion while involving students	10	28.6
Disconnect between teacher and learner	1	2.9
The cost involved in accessing certain additional features on these platforms	1	2.9
Misinterpretation of discussions	1	2.9
Advantages of SNSs for patient care (n=35)*		
Enables rapid sharing of information to the patients	22	62.9
Helps in easy communication of clinical discussions with colleagues and friends	22	62.9
Helps in publicizing research work	16	45.7
Enables easier exchange of information regarding recent developments in the medical field	15	42.9
Impacts health policy decisions	9	25.7
Engages in health advocacy with the patients	8	22.9
Helps to advertise clinical practices	5	14.3
Trainee doctors get to see surgical procedures using videos available online on various SNSs	1	2.9
Disadvantages of using SNSs for patient care (n=35)*		
Ethical and legal issues	22	62.9
Erroneous health information available on these platforms	21	60.0
Patients with limited access or who are unfamiliar with these sites get excluded	14	40.0
Excess information on patient management available on some of these platforms	1	2.9
Need to conduct more such training programmes on the usage of SNSs for educational purposes (n=35)		
Strongly agree	14	40.0
Agree	16	45.7
Neutral	4	11.4
Disagree	1	2.9
If strongly agree/agree, mode of training suggested (n=30)*		
Workshop	27	90.0
Seminar	4	13.3
Combined medical education	4	13.3
Preworkshop training (to familiarize participants with instructions, resource materials, and videos to be used in the workshop)	1	3.3

Note: *Multiple responses.

The median self-perceived knowledge score regarding the application of SNSs for educational purposes among the 35 participants before the preworkshop period was reported to be 5 (IQR 3-6), with scores ranging from one to eight. After attending the preworkshop and the workshop, the score was reported to be 9 (IQR 8-9), with scores ranging from four to ten (Z=5.033, P<0.001) (Figure 1).

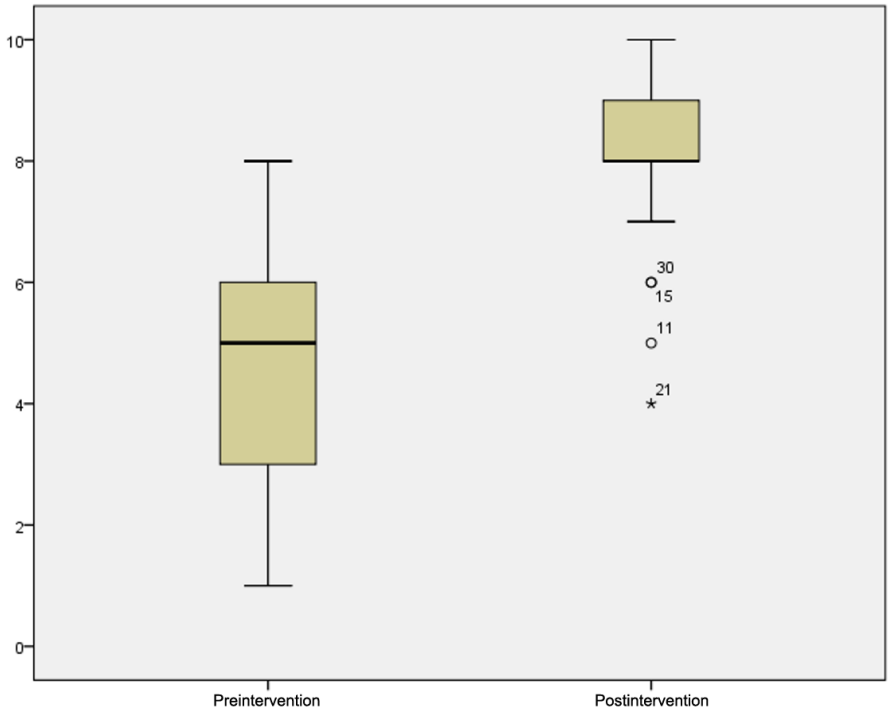

Figure 1. Distribution of self-perceived knowledge scores regarding the application of SNSs for educational purposes among the participants before the preworkshop and after the workshop period (n=35).

Note: *Extreme outlier.

The use of SNSs in the past for educational purposes was significantly greater among faculty members aged ≤50 years (P=0.0275). The use of SNSs in the past for patient management was significantly greater among males (P=0.028). A greater proportion of participants with ≤30 years of teaching experience than those with >30 years of teaching experience reported the need for more training programs in the application of SNSs for educational purposes. However, this observation was not statistically significant (Table 5).

Table 5. Association between sociodemographic variables and practices and perceptions of using SNSs for educational purposes and patient care.

Characteristics	Used SNSs in the past for educational purposes		Total
	Yes (%)	No (%)	
Age group (Years)			
≤50	16(64.0)	9(36.0)	25
>50	2(20.0)	8(80.0)	10
			P=0.0275
Total	18	17	35
	Used SNSs in the past for patient management		
	Yes (%)	No (%)	
Gender			
Males	13(72.2)	5(27.8)	18
Females	6(35.3)	11(64.7)	17
			X^2=4.8, P=0.028
Total	19	16	35
	Perception regarding the need for more training programmes on the application of SNSs for educational purposes.		
	Strongly agree/Agree (%)	Neutral/Disagree (%)	
Years of teaching experience			
≤30	28(87.5)	4(12.5)	32
>30	2(66.7)	1(33.3)	3
			P=0.1968
Total	30	5	35

The average feedback score of the participants was the highest for the usefulness of hands-on exercises during the workshop (Table 6).

Table 6. Feedback on the workshop given by the participants (n=35).

Characteristics	Average feedback score ± SD	Minimum score, Maximum score
Content of the talk	4.0±0.8	3, 5
Delivery of the talk	4.1±0.7	3, 5
Explanations provided	4.1±0.7	3, 5
Use of audio-visual aids and PowerPoint slides	4.0±0.7	3, 5
Interactivity	4.2±0.8	2, 5
Quality of resources shared in the pre-workshop	4.2±0.8	3, 5
The usefulness of hands-on exercises	4.3±0.5	3, 5
Time allotted for hands-on exercises	2.8±0.4	2, 3
The overall pacing of the program	2.0±0.2	1, 2

Six of the 35 participants considered that the facilitators should have discussed a greater number of SNSs during the workshop. The sites suggested for inclusion were Instagram by four participants, LinkedIn by one, and Telegram by one.

Some of the open comments provided by the participants were as follows: SNSs are frequently used by students, and they will find the learning process interesting if delivered through these platforms (stated by three). More workshops covering the role of other SNSs that can be used for educational purposes are required at medical colleges (stated by three). I am planning to use WhatsApp and YouTube for teaching undergraduate and postgraduate students (stated by two). It is easy to disseminate information to a large number of people (stated by one). After attending this workshop, I am confident in using various SNSs for educational purposes (stated by one). If the Microsoft Teams app, which is currently used for online teaching at this institution, is integrated with various SNSs, it will be easier to teach students (stated by one). This was an interesting topic for a workshop (stated by one). Published research papers can be advertised more effectively on various social media platforms (stated by one). Resources shared during the pre-workshop period were very useful (stated by one). This workshop will benefit young faculty members (stated by one). The session on how to record lectures, make edits to videos, and publish them on YouTube was very useful (stated by one). I am willing to upload my lectures on YouTube in the future (stated by one).

At the 6-month follow-up after the workshop, four participants reported using SNSs for educational purposes. The radiodiagnosis specialist prepared multiple videos of biopsy procedures and edited them with voice-over. Later, the InShot app was used to merge these videos. It was then uploaded to YouTube with subtitles. An orthopaedician used the WhatsApp platform to discuss clinical-pathological and clinical-radiological exercises with postgraduate students and faculty members of the orthopaedics departments from the current medical college and of another medical college in Manipal. Various features of WhatsApp that could be used for educational purposes, as discussed in this workshop, were utilized during these discussions. The two radiation oncologists who participated in this workshop created a page titled "KMC Comprehensive Cancer Care" on Facebook and "@kmc_cancercare" on Twitter. The page aims to provide information on cancer care to patients and the general public. For students, educational resources are periodically posted on this page, along with activities such as quizzes, to keep them updated with recent developments in the field of cancer management.

4. DISCUSSION

The role of SNSs in improving the educational performance of medical students and the health outcomes of patients is an important area for research during the current era of the popularity of these platforms.

In the present study, 51.4% of participants had used these sites for educational purposes. The percentages of SNS users for educational purposes reported in other studies were 24.1% among healthcare quality employees (Alanzi & Al-Habib, 2020), 52% (Akçayır, 2017), 63% (Roebuck, Siha, & Bell, 2013), and 70% (Vivakaran & Neelamalar, 2018) among university faculty members of diverse disciplines. These findings indicate that SNSs are popular platforms for educational purposes among faculty members worldwide.

The site most commonly used for educational purposes by the participants in this study was WhatsApp, followed by YouTube. In other studies, the most common site used by healthcare professionals for educational purposes was LinkedIn (Srimarut & Techasatian, 2019) and YouTube (Khan, Saleh, & Quazi, 2021); used by healthcare providers for educational purposes was YouTube (Alanzi & Al-Habib, 2020); used by health workers for educational purposes was WhatsApp (Eguavoen, 2017), and used by university faculty members for educational purposes was YouTube (Vivakaran & Neelamalar, 2018). Considering the popularity of WhatsApp and YouTube among faculty members, these SNSs should be widely encouraged for their use in educational purposes.

The participants in the present study described building knowledge about the subject among students, followed by the convenience of sharing resource materials related to the subject with students as the most common benefits experienced after using SNSs for educational purposes. In a study conducted with faculty members at various universities in the state of Tamil Nadu, India, 59.2% of the participants found SNSs to improve students' learning, 57.1% believed SNSs have high potential to increase interaction with students, 53.6% found SNSs easier for sharing resources, 51% considered SNSs a means to enhance their own knowledge, 49% believed SNSs increase students' satisfaction with the course, 48.2% found SNSs useful for collaborative learning among students, 46.4% regarded SNSs as good academic reference sites for students, and 44.9% found it easier to improve students' understanding of concepts (Vivakaran & Neelamalar, 2018). In a study of healthcare quality employees in Saudi Arabia, 96.2% of them found SNSs helpful for improving knowledge about their profession, 90% for enhancing creativity, 83.3% for improving decision-making, 80.8% for developing critical skills, and 79.5% for enhancing problem-solving abilities (Alanzi & Al-Habib, 2020). In another study in Thailand among healthcare professionals, 95% of them found it helpful to enhance their professional networking, 70% found it useful for updating their professional knowledge, and 68% found it useful for sharing workplace ideas (Srimarut & Techasatian, 2019). Therefore, in addition to benefits such as building knowledge and the convenience of sharing resource materials among learners, as reported by most participants in the present study, several other benefits were perceived by participants in other studies. This further supports the need to use SNSs for teaching and educational networking purposes.

While the use of SNSs for educational purposes fosters creativity and engagement in medical education, it is important to acknowledge its limitations alongside these opportunities for innovation in classroom teaching. Most YouTube users in the present study reported the inability to share photographs as a significant disadvantage of using this platform for teaching purposes. Other challenges faced by users in different studies included difficulty in monitoring students, the need for institutional support, information overload, the requirement for preparation time, misinformation, and privacy concerns (Antheunis, Tates, & Nieboer, 2013; Chretien, Greysen, Chretien, & Kind, 2009; Roebuck et al., 2013). Hence, facilitators need to keep the limitations specific to each SNS in mind and be better prepared to handle various anticipated challenges before using SNSs in classroom teaching.

As many as 54.3% of the participants in the present study had used SNSs for patient management in the past, with WhatsApp being the most commonly used platform for this purpose. The most common reason cited by participants for using SNSs for patient management was to conduct patient consultations. In a study performed in Thailand by Srimarut and Techasatian (2019), 63% of doctors used SNSs for communication with colleagues to discuss patient management. In another study in Iraq by Numan (2021), one-fourth of doctors used SNSs to provide medical advice to people, and 15% used SNSs to maintain relationships with patients. In a study in Saudi Arabia by Samarkandy et al. (2023), 88% of doctors from different specialties reported having received consultations from

patients through social media. From these observations, it can be inferred that SNSs are frequently used by medical practitioners worldwide to hold patient consultations.

The majority of participants in the present study perceived SNS as an easy and rapid way to share information with students and patients. In a study conducted in Turkey by Akçayır (2017), among faculty members from eight universities, 90% considered it an effective and fast communication method, 65% regarded it as a convenient platform for educational purposes, and 51.8% viewed its use as a welcome opportunity to connect with students. In a study in Saudi Arabia by Alanzi and Al-Habib (2020), 82% of healthcare quality workers believed that SNSs were helpful in improving knowledge about healthcare quality.

In a study in Nigeria, Eguavoen (2017) reported that more than 90% of health care workers perceived that the information, if shared on SNSs, was quick to disseminate, improved communication with patients, was cost-effective, and hence should be encouraged. In a study in Saudi Arabia by Samarkandy et al. (2023), 49.2% of doctors of different specialties strongly agreed or agreed that it was appropriate for a doctor to interact with patients professionally through SNSs.

Most of the participants in this study perceived a lack of privacy and confidentiality of information shared, and ethical and legal issues were concerns if SNSs were used for educational purposes and patient management, respectively. Similarly, in a study in Turkey among university faculty members by Akçayır (2017), 37.5% perceived privacy concerns as the inhibiting factor in the use of SNSs for educational purposes. In another study in Tamil Nadu, India, among university faculty members of diverse disciplines by Vivakaran and Neelamalar (2018), the potential barriers perceived by participants on the sustained usage of SNSs for pedagogical applications were insufficient technological facilities (47.6%), limited access to SNSs within the campus (44.4%), concerns about distractions (27%), concerns about privacy (38.1%), concerns about the credibility of information (25.4%), lack of support from the institution (22.2%), concerns regarding integrity in student submissions (15.9%), concerns regarding the training required to use these platforms (14.3%), and complexity involved in the grading and assessment process (14.3%).

In a study in England by Khan et al. (2021), 95% of doctors felt that the information on SNSs might not be accurate. In a survey among physicians by Bosslet, Torke, Hickman, Terry, and Helft (2011), 68% perceived that interacting with patients on SNSs had ethical issues related to personal and professional domains. In an Australian study by Brown, Ryan, and Harris (2014), only 21.2% of doctors felt that it would be appropriate to use SNSs to communicate with patients. Additionally, 38.1% of them reported that it was their duty to rebut inaccurate information posted online. In the study with doctors in Iraq by Numan (2021) 43% considered SNSs as a medium for spreading false information. Hence, the various drawbacks of SNSs and ways to overcome them need to be familiarized with faculty members before they advocate the use of SNSs for educational purposes and patient management.

In the present study, 85.7% of the participants stated that there is a need to conduct more training programs in the future on the usage of SNSs in medical education among faculty members. This indicates that faculty members believe it is worthwhile to spend time and effort learning how various SNSs can be applied for educational purposes by participating in training programs such as workshops.

In the present study, the use of SNSs for educational purposes was significantly less common among faculty members aged more than 50 years, probably because of their unfamiliarity. A greater proportion of female faculty members not utilizing this platform for patient management might be due to privacy concerns. They, therefore, need to be made aware of and trained to utilize the safety features available on various SNSs to hold consultations with their patients.

The participants in this workshop reported a significant improvement in their perceived knowledge regarding the application of various SNSs for educational purposes after attending the workshop. This was also supported by their favorable feedback scores about the pre-workshop training and the workshop.

This was a short-term study to assess the perceptions and usage practices of SNSs for education and patient management among faculty members of various health science courses. It primarily targeted the Kirkpatrick Model

- Levels 1 and 2. At Level 1, it aimed to determine the participants' reactions regarding the engagement of the workshop. At Level 2, it assessed whether participants acquired sufficient information to apply SNSs for educational purposes and patient management in the future. It marginally addressed Level 3, which focused on behavioral changes in how they applied the knowledge and skills gained during the six-month period after the workshop. However, it did not evaluate Level 4, which measures results in terms of performance among students and patients after using SNSs for education and patient management, respectively. The authors intend to extend this study to assess long-term changes, such as increased legitimate knowledge, the validity of findings, and critical engagement in their work environment. This would include conducting a pretest among students, followed by trained faculty members teaching core subjects via SNS platforms, and then a posttest among the same students. An improvement in formative assessment scores would support the benefits of applying SNSs for educational purposes. Feedback from students regarding their positive and negative experiences can help improve future teaching and learning sessions involving SNS platforms. Similarly, faculty trained in using SNSs for patient management can gather feedback from patients who receive consultations either through conventional methods or via SNS platforms. More favorable feedback from patients and higher posttest scores among students would substantiate the role of SNSs in addressing education, practice, and policy. This would demonstrate whether the workshop facilitated genuine learning practices aligned with all levels of the Kirkpatrick Model (Kirkpatrick Partners, 2023).

This study had a few limitations. The sample size was small, and participants were enrolled non-randomly in this study. Hence, the study population may not be representative of the faculty members of this institution. There could also be non-reporting of information by the participants regarding their practices of using SNSs for medical education and patient care in the past.

5. CONCLUSION

More than half of the faculty members have used SNSs in the past, either for educational purposes or for patient management. The majority of users shared positive experiences regarding its benefits, indicating the usefulness of SNSs for both educational purposes and patient management. The workshop was found to be beneficial to participants, as reflected in their higher post-test knowledge scores. As many as 85.7% of participants emphasized the need for more such training programs at medical colleges. This approach might be especially beneficial for older faculty members who use SNSs minimally for educational purposes, possibly due to unfamiliarity with technology, and for female faculty members who use SNSs minimally for patient management, likely because of privacy concerns. The findings of this study highlight the promising potential of using SNSs for academic purposes and patient management. However, appropriate training on its usage must be provided before its application in health professionals' education and practice. The investigators therefore hope to conduct more training programs on the use of SNSs for academic purposes and patient care among faculty members at this institution in the near future.

Funding: This study received no specific financial support.
Institutional Review Board Statement: The Ethical Committee of the Kasturba Medical College, Mangalore, Manipal Academy of Higher Education, India has granted approval for this study on 17 August 2022 (IEC KMC MLR 08/2022/326).
Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

REFERENCES

Ahmed, A. M., AbdelAlmuniem, A., & Almabhouh, A. A. (2016). The current use of Web 2.0 tools in university teaching from the perspective of faculty members at the college of education. *International Journal of Instruction*, *9*(1), 179–194. https://doi.org/10.12973/iji.2016.9114a

Akçayır, G. (2017). Why do faculty members use or not use social networking sites for education? *Computers in Human Behavior*, *71*, 378-385. https://doi.org/10.1016/j.chb.2017.02.028

Alanzi, T., & Al-Habib, D. K. (2020). The use of social media by healthcare quality personnel in Saudi Arabia. *Journal of Environmental and Public Health*, *2020*(1), 1417478. https://doi.org/10.1155/2020/1417478

Antheunis, M. L., Tates, K., & Nieboer, T. E. (2013). Patients' and health professionals' use of social media in health care: Motives, barriers and expectations. *Patient Education and Counseling*, *92*(3), 426-431. https://doi.org/10.1016/j.pec.2013.06.020

Bosslet, G. T., Torke, A. M., Hickman, S. E., Terry, C. L., & Helft, P. R. (2011). The patient–doctor relationship and online social networks: Results of a national survey. *Journal of General Internal Medicine*, *26*(10), 1168-1174. https://doi.org/10.1007/s11606-011-1761-2

Boyd, d. m., & Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication*, *13*(1), 210-230. https://doi.org/10.1111/j.1083-6101.2007.00393.x

Brown, J., Ryan, C., & Harris, A. (2014). How doctors view and use social media: A national survey. *Journal of Medical Internet Research*, *16*(12), e267. https://doi.org/10.2196/jmir.3589

Cahn, P. S., Benjamin, E. J., & Shanahan, C. W. (2013). 'Uncrunching' time: Medical schools' use of social media for faculty development. *Medical Education Online*, *18*(1), 20995. https://doi.org/10.3402/meo.v18i0.20995

Chretien, K. C., Greysen, S. R., Chretien, J.-P, & Kind, T. (2009). Online posting of unprofessional content by medical students. *The Journal of the American Medical Association*, *302*(12), 1309-1315.

Davis, W. M., Ho, K., & Last, J. (2015). Advancing social media in medical education. *Canadian Medical Association Journal*, *187*(8), 549-550. https://doi.org/10.1503/cmaj.141417

Eguavoen, E. O. (2017). Perception and use of social media for information sharing among health workers in general hospitals in Ibadan, Oyo State. *IOSR Journal of Humanities and Social Science*, *22*(5), 9–21.

George, D. R., Rovniak, L. S., & Kraschnewski, J. L. (2013). Dangers and opportunities for social media in medicine. *Clinical Obstetrics and Gynecology*, *56*(3), 453–462. https://doi.org/10.1097/GRF.0b013e318297dc38

Guckian, J., Utukuri, M., Asif, A., Burton, O., Adeyoju, J., Oumeziane, A., . . . Rees, E. L. (2021). Social media in undergraduate medical education: A systematic review. *Medical Education*, *55*(11), 1227–1241. https://doi.org/10.1111/medu.14567

Hillman, T., & Sherbino, J. (2015). Social media in medical education: A new pedagogical paradigm? *Postgraduate Medical Journal*, *91*(1080), 544-545. https://doi.org/10.1136/postgradmedj-2015-133686

Katz, M., & Nandi, N. (2021). Social media and medical education in the context of the COVID-19 pandemic: Scoping review. *JMIR Medical Education*, *7*(2), e25892. https://doi.org/10.2196/25892

Khan, M. I., Saleh, M. A., & Quazi, A. (2021). Social media adoption by health professionals: A TAM-based study. *Informatics*, *8*(1), 6. https://doi.org/10.3390/informatics8010006

Khan, M. N., Faraz, A., Jamal, A. B., Craig, S., Ilyas, W., Ahmad, F., . . . Riaz, W. (2021). A study to see the effect of social media usage among healthcare providers. *Cureus*, *13*(7), e16350. https://doi.org/10.7759/cureus.16350

Kirkpatrick Partners. (2023). *The Kirkpatrick model*. Retrieved from https://www.kirkpatrickpartners.com/the-kirkpatrick-model/

Lederman, D. (2012). *Professors and social media use. Inside Higher Ed.* Retrieved from https://www.insidehighered.com/quicktakes/2012/10/19/professors-and-social-media-use-2012

Numan, H. (2021). The use of social media in the patient–doctor relationship: The case of Iraq. *Arab Media & Society*, *31*, 47–60.

Roebuck, D. B., Siha, S. M., & Bell, R. L. (2013). Faculty usage of social media and mobile devices: Analysis of advantages and concerns. *Interdisciplinary Journal of e-Skills and Lifelong Learning*, *9*, 171-192. https://doi.org/10.28945/1914

Rogers-Estable, M. (2014). Web 2.0 Use in Higher Education. *European Journal of Open, Distance and E-Learning*, *17*(2), 130-142.

Rogers, M. (2013). *Wired for teaching*. Retrieved from https://www.insidehighered.com/news/2013/10/21/more-professors-using-social-media-teaching-tools

Samarkandy, S. J., Samargandy, S., Abbas, R. A., Alshareef, A., Nassar, N., & Alharbi, A. (2023). Physicians' attitude and perception towards social media medical consultation. *Cureus*, *15*(1), e33671. https://doi.org/10.7759/cureus.33671

Srimarut, T., & Techasatian, K. (2019). Use of social media in health care by patients and health care professionals: Motives & barriers in Thailand. *Utopía y Praxis Latinoamericana*, *24*, 215–223.

Steinert, Y., McLeod, P. J., Boillat, M., Meterissian, S., Elizov, M., & Macdonald, M. E. (2009). Faculty development: A 'Field of Dreams'? *Medical Education*, *43*(1), 42-49. https://doi.org/10.1111/j.1365-2923.2008.03246.x

Ventola, C. L. (2014). Social media and health care professionals: Benefits, risks, and best practices. *P & T: A Peer-Reviewed Journal for Formulary Management*, *39*(7), 491–520.

Vivakaran, M. V., & Neelamalar, M. (2018). Utilization of social media platforms for educational purposes among the faculty of higher education with special reference to Tamil Nadu. *Higher Education for the Future*, *5*(1), 4-19. https://doi.org/10.1177/2347631117738638

Appendix

Awareness, perception, and practices of using social networking sites in education and patient management among faculty members of various health science courses: A study conducted during a faculty development program

Pre-test questionnaire

Section 1

1. Age (in completed years): _____ 2. Gender: Male/ Female

3. Department: _____ 4. Designation: _____

5. Total years of teaching experience after graduation: _____

6. Are you a user of social networking sites (SNS)? Yes/No. If yes, please specify the SNS used (tick all that apply): YouTube/ Facebook/ WhatsApp/ LinkedIn/ Twitter/ Snapchat/ Telegram/ Pinterest/ Scoop.it/ Instagram/ Others:_____

7. Have you attended any training program in the application of SNSs in medical education or patient management before this workshop? Yes/No. If yes, please specify details: _____

Section 2

8. Have you used any SNS for teaching undergraduate (UG) or postgraduate (PG) students in the past? Yes/No

(a) If No, specify the reason for not using (tick as many as applicable): Unaware of ways it can be used for teaching purposes / Not familiar with this technology / Others: _____

If No, go to Question 9

(b) If Yes, please specify the SNS used (tick all that apply): YouTube/ Facebook/ WhatsApp/ LinkedIn/ Twitter/ Snapchat/ Telegram/ Pinterest/ Scoop.it/ Campus Pack Wikis/ Instagram/ Others:_____

(c) Fill the following table and let us know in what way it benefitted the UG or PG students:

Use the code: 1 for Useful, 0 for not useful to fill this table

Social networking sites used	Building knowledge about the subject	Brought creativity into the learning process	Stimulated critical thinking	Improved problem-solving skills	Supported clinical teaching	Easy to use	Sharing videos	Sharing photographs related to the subject	To share resource materials/literature for educational purposes	Others specify: _____
YouTube										
Facebook										
WhatsApp										
LinkedIn										
Twitter										
Instagram										
Others (specify):										

9. What do you believe are the advantages of using SNSs for medical education? (tick as many as applicable): Quick way to share information with a large group/ Easy way to share information with students/ Enables remote work/ Helps to build relationships within the group/ Promotes teamwork/ Others:_____

10. What do you feel are the disadvantages of using SNSs for medical education? (tick as many as applicable): Requires familiarity with technology for usage/ Lack of privacy and confidentiality of information shared/ Availability of erroneous health information for readers in these platforms/ Ethical and legal issues/ Discussion of patient-based case studies on SNSs may not be a serious discussion while involving students/ Others: _____

Section 3

11. Have you used any SNS for patient management in the past? Yes/No

If No, go to Question 12

(a) If Yes, specify the SNS used (tick all that apply): YouTube/Facebook/WhatsApp/LinkedIn/Twitter/Snapchat/Others:_____

(b) Describe in what manner it was used? (tick as many as applicable): To hold patient consultations/ to discuss with colleagues about a patient's condition/ for sharing patient's laboratory reports with colleagues/ Others:_____

12. What do you think are the advantages of using SNSs for patient management? (tick as many as applicable): Enables rapid sharing of information with patients / Facilitates easy communication of clinical discussions with colleagues and friends / Helps to advertise clinical practices / Engages in health advocacy with patients / Influences health policy decisions / Enables easier exchange of information regarding recent developments in the medical field / Assists in publicizing research work / Others:_____

13. What do you think are the disadvantages of using SNSs for patient management? (tick as many as applicable): Lack of privacy and confidentiality of shared information/ Availability of erroneous health information for readers on

these platforms/ Ethical and legal issues/ Patients with limited access or who are unfamiliar with these sites are excluded/ Others:_____

14. Do you feel there is a need to conduct more training programmes on the usage of SNSs for educational purposes? Strongly agree/ Agree/ Neutral/ Disagree/ Strongly disagree

If you strongly agree or agree, what modes of training do you feel would be appropriate? (tick as many as applicable): CME/ Workshop/ Seminar/ Others:_____

On a scale of 10, how would you rate your knowledge of applying SNS for educational purposes before participating in the pre-workshop training?
Score 0 indicates the least and Score 10 indicates the best knowledge (circle the appropriate number).
0 1 2 3 4 5 6 7 8 9 10

Please enter your five-digit numeric code:

Post-test questionnaire

1. On a scale of 10, how would you rate your current knowledge of applying SNS for educational purposes after attending this workshop?
Score 0 indicates the least and Score 10 indicates the best knowledge. Please circle the appropriate number.
0 1 2 3 4 5 6 7 8 9 10
Please enter your five-digit numeric code (the same as the number stated in the pre-test questionnaire):

Feedback of the sessions

1. Your overall rating of this workshop? (tick the appropriate option)

	Poor	Average	Good	Very good	Excellent
Content of the talk					
Delivery of the talk					
Explanations provided					
Use of audio-visual aids and PowerPoint slides.					
Interactivity					
Quality of resource materials shared in the pre-workshop.					

2. How useful were the hands-on exercises during the session? Very useful/ Useful/ Somewhat useful/ Less useful/ Not useful
3. How was the time allotted for the hands-on exercises? Too fast/ Just right/ Too slow
4. How was the overall pacing of the program? Too fast/ Just right/ Too slow
5. Do you think any other SNS could have been covered in this workshop: Yes/No. If yes, please specify:_____
6. Please feel free to provide any specific feedback/suggestion on any of the sessions in the space below. Also, if you have marked poor or average for any aspect of any session, kindly specify the reason for the same.
7. Any other remarks or suggestions: