

Anaesthetists' use and ethical and legal knowledge of social media

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Background: The exact role social media has in healthcare is still being defined. The aim of this study is to describe how anaesthetists are currently using social media and their knowledge of ethical and legal aspects relating to its use.

Methods: A prospective, contextual, descriptive research design was followed. The study population consisted of all anaesthetists working in the Department of Anaesthesiology at the University of the Witwatersrand. A convenience sampling method was used. Data were collected in the form of a self-administered questionnaire.

Results: Of 170 questionnaires that were distributed, 159 were completed. Social media is used by 135 (84.9%) participants both personally and professionally. Eight (5%) participants do not use social media at all. Facebook was the most commonly used platform for personal use ($n = 121$; 80.1%). For professional use, restricted online professional communities were the most commonly used ($n = 92$; 57.9%). Participants younger than 42 years used social media for personal reasons significantly more frequently than participants aged 42 years or older ($p = 0.001$). Only nine (5.7%) participants had adequate knowledge of ethical and legal aspects.

Conclusion: The large proportion of participants using social media demonstrate it has a role personally, as well as professionally. It was affirmed that there is potential for social media to enhance the profession of anaesthesiology. The lack of knowledge regarding ethical and legal aspects needs to be addressed. It is essential for doctors that, from an early point in their careers, social media guidelines are ingrained to protect themselves and their patients from potential harm.

Keywords: social media, anaesthesiology and social media, ethical guidelines, knowledge of guidance

Introduction

The field of medicine is one that is constantly evolving with advancements in many spheres, and healthcare practitioners are encouraged to evolve with it, remaining receptive to the changes whilst staying true to the governing ethical principles.¹ The use of social media platforms globally has increased over time² and South Africa is no exception. According to statistics from the South African Social Media Landscape 2018 Executive Summary,³ 16 million South Africans are using Facebook, 8 million are using Twitter, LinkedIn has 6.1 million users and 3.8 million are using Instagram. These are powerful tools for communication owing to the vast number of people engaging with them.

The exact role social media has in healthcare is still being defined, and a better understanding of how it is being used will give an indication of the impact it has and the potential for its use. This is complex as there are both patients and doctors utilising social media, either amongst themselves or interacting with each other, on platforms that are secure or public.¹ Literature suggests that doctors use social media in a personal capacity⁴⁻⁷ as well as in a professional capacity for purposes such as sharing of medical information,^{1,8} education of healthcare professionals,⁹⁻¹¹ as a tool for patient education,⁴ to promote physician practices,⁶ and, in a small minority, to engage directly with patients in health promotion.^{5,12,13}

Maintaining professionalism and upholding ethical principles whilst using social media in healthcare is paramount,¹⁴⁻¹⁶ and to assist with this, various different organisations offer social media guidance. The American Medical Association,¹⁷ the British Medical Association,¹⁸ the General Medical Council in

the United Kingdom¹⁹ and the Canadian Medical Association²⁰ all offer guidance with similar key principles. In South Africa, prior to 2019, guidance for social media use amongst doctors could be obtained indirectly from the Health Professions Council of South Africa (HPCSA)²¹⁻²³ as well as from social media guidance published on the website of the South African Medical Association (SAMA).²⁴ In the latter part of 2019, the HPCSA published social media guidelines for healthcare practitioners.²⁵ They highlight the importance of patient confidentiality and privacy as well as professionalism, and give succinct guidance with regards to dealing with practitioner-patient interaction on social media.

In order to use social media in a professional capacity safely and effectively, doctors must be aware of the laws governing personal information and privacy.¹⁴⁻¹⁶ The right to privacy is included in the Bill of Rights in Chapter 2 of the South African Constitution (Act No. 108 of 1996),²⁶ and with this is the right patients have to confidentiality included in The National Health Act (Act No. 61 of 2003).²⁷ Healthcare professionals are responsible for protecting their patients' personal information and ensuring there is no improper disclosure of information.²³ The Protection of Personal Information Act (Act No. 4 of 2013)²⁸ governs this. Unprofessional conduct on social media may result in disciplinary action by the HPCSA in accordance with the powers given under the Health Professions Act (Act No. 56 of 1974).²⁹

Anaesthesiology is a specialty that is rapidly evolving, often incorporating the latest technology into practice. Social media is being used within the profession as evidenced by journals regularly contributing to Twitter feeds,³⁰ Twitter being used as a tool for enhancement of conferences,^{30,31} and YouTube and

Facebook being used as education tools in the field of regional anaesthesia.³¹ Limited research has been identified on whether or not anaesthetists themselves are engaging with social media, and if so, how they are using it. It is also important to identify the existing knowledge of the laws and ethical guidance that govern social media use by doctors as these are essential to maintain professionalism and patient confidentiality. The aim of this study is to describe how anaesthetists and junior doctors working in the Department of Anaesthesiology at the University of the Witwatersrand are currently using social media and their knowledge of ethical and legal aspects relating to its use.

Methods

A prospective, contextual, descriptive research design was followed.

The study population consisted of all doctors working in the Department of Anaesthesiology at the University of the Witwatersrand, which included 53 interns, 22 medical officers, 112 registrars and 74 consultants at the time of the study. A convenience sampling method was used. Questionnaires were administered to the entire accessible population. A response rate of 60% (157 completed questionnaires) was considered as acceptable.³²

The definition of social media was taken from Kaplan and Haenlein³³ who define it as "a group of internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content." User generated content refers to any form of media that is created and made publicly available by those utilising social media. Kaplan and Haenlein³³ discuss six different types of social media. These include blogs, collaborative projects such as Wikipedia, content communities such as YouTube, social networking sites, virtual social worlds and virtual game worlds. These allow for differing levels and forms of communication and self-disclosure.

Based on an extensive literature review, two questionnaires, Pearson et al.⁷ and Brown et al.,⁴ were identified that were useful for this study. Permission to use and adapt these questionnaires was obtained from these authors. The questionnaires were modified to contextualise the study to South Africa. Questions testing knowledge of ethical and legal aspects were also added. The questionnaires were then reviewed by three anaesthesiologists to achieve face and content validity. Following the review, minor corrections were made. The self-administered questionnaire consisted of five sections (questionnaire available from corresponding author on request). Section 1 included the demographics of the participants. The age categories were structured according to generations in order to compare social media use and knowledge across different generations. The exact divisions of generations seem to vary in different texts, but for the purpose of this study, the generations included were gen Z (< 23 years), millennials (23–41 years), generation X (42–53 years), baby boomers (54–72 years) and the silent generation (> 72 years).³⁴ Section 2 focused on how participants use social

media in a personal capacity and Section 3 focused on how participants use social media in a professional capacity. Section 4 included questions testing the participant's knowledge of ethical and legal aspects relating to social media use. These questions were developed using the available literature. The knowledge of SAMA guidance and laws relating to social media were tested. Clinical scenarios were created to test the ethical and legal framework. Finally, the questions in Section 5 asked if ethical and legal concerns relating to social media are a barrier to use, as well as if social media use has value in anaesthesia. Owing to the weight of the consequences if errors are made on social media, adequate knowledge in this study was regarded as a score of 7 or more out of 9 (78% or more).

Data were collected at departmental academic meetings. Those who agreed to participate were given the information letter and the questionnaire. One author (AG) remained at the meeting to be available to answer any questions and to prevent data contamination. Once completed, the questionnaires were placed into a sealed box. Each questionnaire was assigned a number. Questionnaires that were returned blank were also assigned a number and included for response rate calculation but not for data interpretation.

Data were captured onto spreadsheets using Microsoft Excel 2016. Data were analysed in consultation with a biostatistician using STATA version 15 (StataCorp, USA). Categorical variables were described using numbers and percentages. Social media use was divided into "infrequent" and "frequent". "Infrequent" was regarded as the use of platforms once a month or less. "Frequent" use was regarded as the use of platforms once a week or more. Associations were tested using Fisher's exact tests. In order to perform these tests, age categories were grouped into two groups, as was the frequency of social media use as described. The age categories were divided into participants younger than 42 years (gen Z and millennials) and those 42 years or older (generation X, baby boomers and the silent generation). This age division was chosen as millennials have proven to be early adopters of technology compared to older generations.^{35,36} Discrete data obtained from the results of the knowledge questions were presented as a median and interquartile range. A *p*-value of < 0.05 was considered statistically significant.

Results

Of 170 questionnaires that were distributed, 159 were completed, giving a sample realisation of 93.5%. This represents 60.9% of the doctors in the department. The demographics of the participants are shown in Table I.

Social media is used by 135 (84.9%) participants both personally and professionally. One (0.6%) participant uses social media only in a professional capacity and 15 (9.4%) use it only in a personal capacity. Eight (5.0%) participants do not use social media at all. Of these, two (25%) participants were in the 23–41 years age group, three (37.5%) were in the 42–53 years age group and three (37.5%) were in the 54–72 years age group. The social media platforms used personally and professionally are shown

Table I: Demographics of participants

		n	%
Sex	Male	59	37.1
	Female	99	62.3
	Blank	1	0.6
Age (years)	< 23	1	0.6
	23–41	135	84.9
	42–53	9	5.7
	54–72	12	7.5
	> 72	1	0.6
	Blank	1	0.6
	Practice type	Mostly private	1
Mostly public		140	88.1
Public and private		15	9.4
Blank		3	1.9
Professional designation	Intern	45	28.3
	Medical officer	19	11.9
	Registrar	58	36.5
	Consultant	36	22.6
	Blank	1	0.6
Years of experience	< 5	91	57.2
	5–10	43	27.0
	11–20	9	5.7
	> 20	15	9.4
	Blank	1	0.6

in Figure 1. Participants were given an opportunity to list other platforms used for personal and professional reasons. WhatsApp was written by 21 (13.9%) participants, with six (28.6%) participants using it for both personal and professional reasons. Other platforms included Pinterest ($n = 3$; 2.0%), Reddit ($n = 1$; 0.7%), Strava ($n = 1$; 0.7%), 9gag ($n = 1$; 0.7%) and Figure1 ($n = 1$; 0.7%) for personal use, and Pinterest ($n = 2$; 1.3%), Khan Academy ($n = 1$; 0.7%) and Synapse ($n = 1$; 0.7%) for professional use.

Figure 2 shows the reasons for social media use in a personal and professional capacity. Participants listed other reasons for utilising social media in a professional capacity which included teaching purposes ($n = 1$; 0.7%), organising and advertising meetings and conferences ($n = 1$; 0.7%), referrals ($n = 1$; 0.7%) and communication with colleagues ($n = 4$; 2.6%).

Frequency of social media use for both personal and professional reasons is shown in Table II. These results include those participants who do not use social media at all. Some participants marked "never" with regards to frequency of social media use despite indicating that they do use social media platforms for personal or professional reasons.

There was no statistically significant association found between sex and frequency of personal social media use ($p = 0.196$). Of the males, 43 (74.1%) used social media for professional reasons frequently compared to 53 (54.1%) of the females. One male and one female participant left this question blank. Males were thus found to use social media for professional reasons significantly

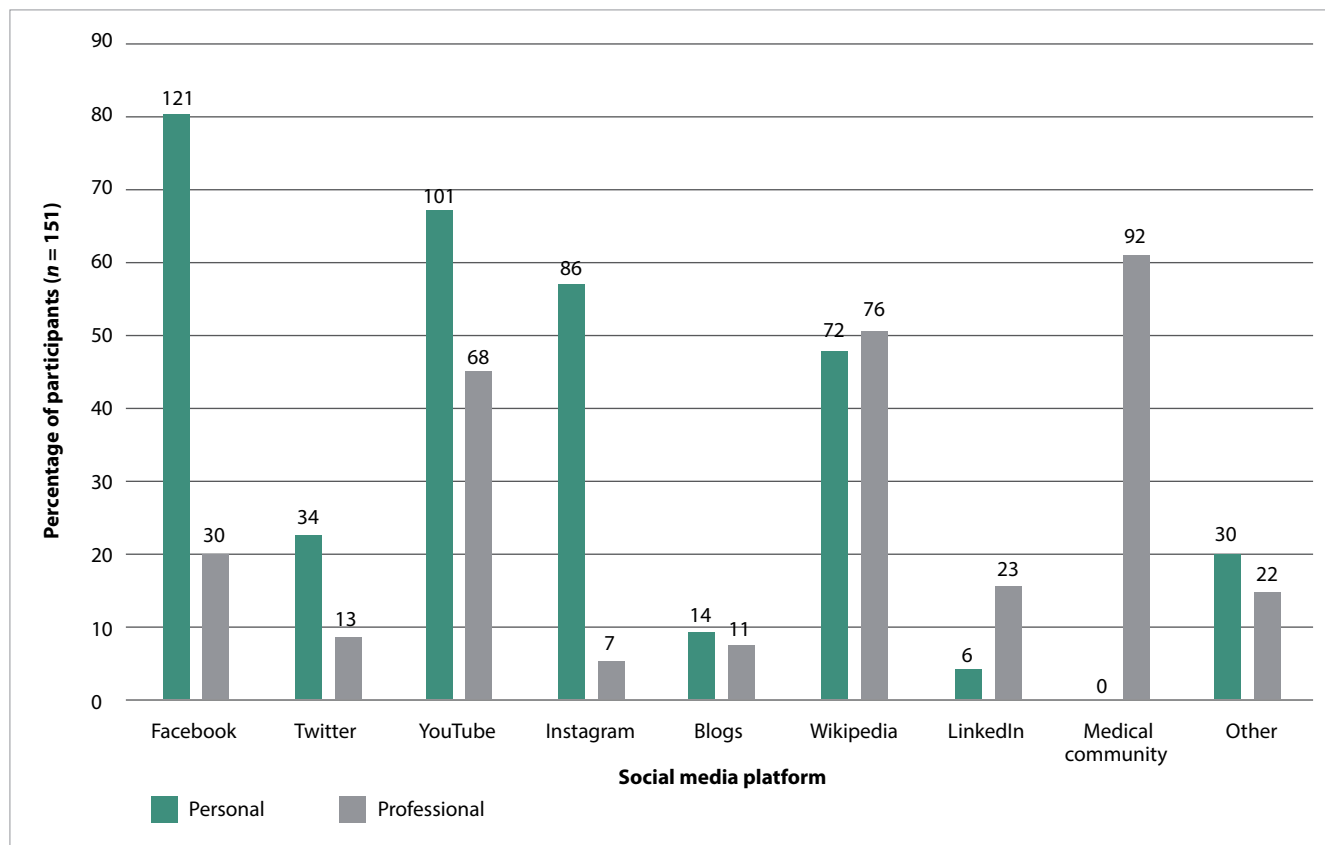


Figure 1: Social media platforms used for personal and professional reasons

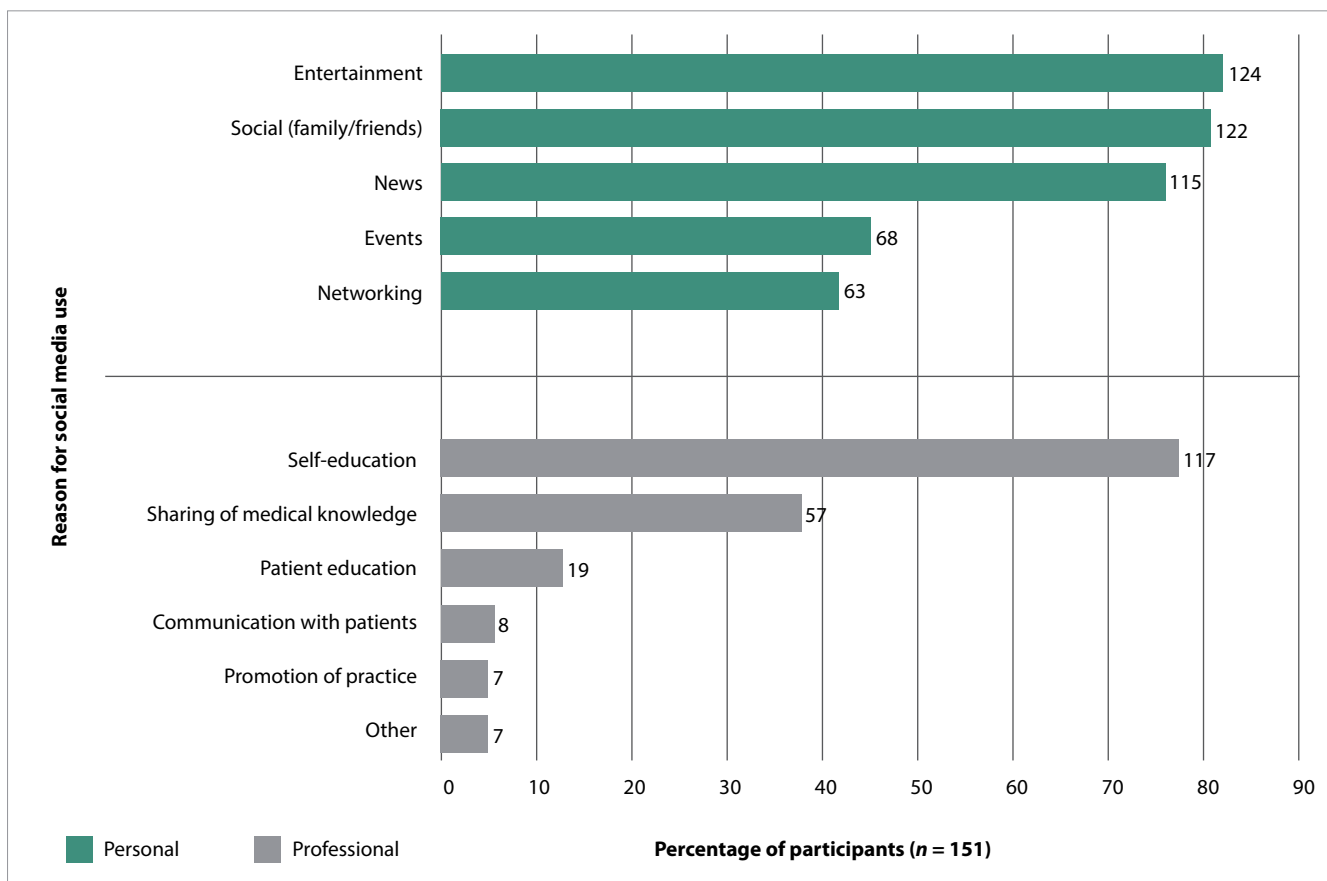


Figure 2: Reasons for professional and personal social media use

Table II: Frequency of social media use for personal and professional reasons

Frequency of social media	Personal n (%)	Professional n (%)
Never	11 (6.9)	30 (18.9)
Infrequently	10 (6.3)	20 (12.6)
Monthly	7 (4.4)	10 (6.3)
Weekly	10 (6.3)	22 (13.8)
Several times a week	24 (15.1)	31 (19.5)
Daily	43 (27.0)	33 (20.8)
Several times a day	54 (34.0)	11 (6.9)
Blank	0 (0)	2 (1.3)

more frequently than females ($p = 0.017$). Participants younger than 42 years used social media for personal reasons significantly more frequently than participants aged 42 years or older ($p = 0.001$). This was indicated by 118 (86.8%) participants younger than 42 years who frequently used social media for personal reasons compared to 12 (54.5%) participants aged 42 years or older who did the same. There was no statistically significant association between the two age groups and frequency of social media use for professional reasons ($p = 0.104$).

The number of participants who have received Facebook friend requests from patients and the response to an actual or potential request is shown in Table III.

Of the 159 participants, 93 (58.5%) are aware of the results that appear when they Google their full name and 91 (57.2%) participants take measures to curate and control their online profile,

Table III: Facebook friend requests from patients

Facebook friend request from a patient	
Response	n (%)
Yes	27 (17.0)
No	127 (79.9)
Blank	5 (3.1)
Response to an actual or potential Facebook friend request from a patient	
Accept the request	3 (1.9)
Decline	85 (53.5)
Decline and explain	17 (10.7)
Do nothing	48 (30.2)
Blank	6 (3.8)

including 86 (54.1%) participants who know how to remove unwanted online photos of themselves.

The results of the knowledge questions showed that only nine (5.7%) participants have adequate knowledge of ethical and legal aspects relating to social media use. The median score obtained by participants was 5 (IQR 3–5). Two (1.3%) participants, an intern and a registrar, scored 8 with this being the highest score. Figure 3 shows the distribution of knowledge scores.

There was no statistically significant association found between increasing age categories and adequacy of knowledge in a univariate logistic regression (OR 0.23; 95% CI 0.01–1.41; $p = 0.30$). Table IV shows knowledge adequacy by demographics.

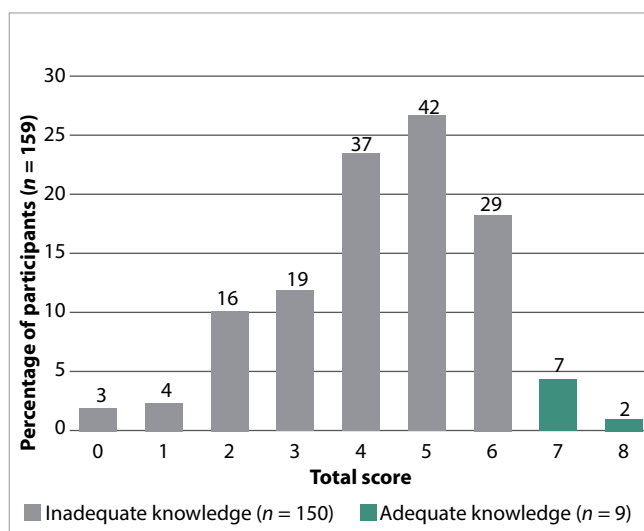


Figure 3: Knowledge scores

Table IV: Knowledge adequacy by demographics

		n	Adequate knowledge
			n (%)
Sex	Male	59	4 (6.8)
	Female	99	5 (5.1)
Age (years)	< 23	1	0 (0)
	23–41	135	9 (6.7)
	42–53	9	0 (0)
	54–72	12	0 (0)
	> 72	1	0 (0)
Practice type	Mostly private	1	0 (0)
	Mostly public	140	8 (5.7)
	Public and private	15	1 (6.7)
Professional designation	Intern	45	1 (2.2)
	Medical officer	19	2 (10.5)
	Registrar	58	4 (6.9)
	Consultant	36	2 (5.6)
Years of experience	< 5	91	5 (5.5)
	5–10	43	3 (7.0)
	11–20	9	1 (11.1)
	> 20	15	0 (0)

When considering the response of participants to social media use, 82 (51.6%) participants indicated that ethical and legal concerns caution them from using it in a professional capacity. Despite this, 136 (85.5%) participants felt there is potential for social media to enhance the profession of anaesthesiology and 125 (78.6%) participants indicated that social media platforms have assisted with their learning in anaesthesia.

Discussion

In this study, 95% of participants use social media. This is the highest use noted in the identifiable relevant literature.^{4-7,37,38} Most of the other studies^{4,6,7,37,38} had a more even age distribution of participants. In this study, the majority of participants fell into one age category. Most participants use social media frequently (once a week or more) for both personal and professional reasons.

There is a paucity of research that actively compares personal and professional social media use amongst doctors. Certain studies suggested that doctors use social media predominantly in a personal capacity^{5,6} but these studies are outdated and methodologies differed. Statistics from the Pew Research Centre³⁹ published in September 2019 confirm that millennials use social media more than older generations, and considering that 84.9% of participants were millennials, it was expected that they would be found to use social media more frequently for personal use than the older generations. Brown et al.⁴ and Surani et al.³⁸ noted similar associations between age and social media use. What is interesting is that there was no significant difference in the frequency of use for professional reasons in the different generations.

Although online medical communities were the most common form of social media used for professional reasons, Wikipedia was the second most common site used, and was the most common site used for a combination of personal and professional reasons. This is surprising as Wikipedia provides information that is neither peer reviewed nor necessarily accurate. This finding was not unique. A study done in the United Kingdom in 2008 showed that 70% of physicians who participated used Wikipedia to search for medical information.⁴⁰

As acknowledged by Van Zundert et al. in 2016,⁴¹ the ever evolving content in the specialty makes it challenging for anaesthetists to keep up to date with the latest literature. The authors suggest the development of an open access collaborative site similar to Wikipedia but with information specific to anaesthesia that is regulated and peer-reviewed.⁴¹ This concept is known as free open access medical education (FOAM) which involves a community that promotes collaboration to share resources and knowledge through various different media, including social media platforms such as Facebook groups and Twitter, in order to augment medical education.⁴² There are advantages and disadvantages to FOAM, one of the disadvantages being the variability in the quality of content.⁴³

WhatsApp was initially not included as a social media platform in this study, but it needs to be addressed as 13.2% of participants listed it as one of the "other" social media platforms used. WhatsApp is primarily a messaging service, but various features of this application may make it classifiable as a form of social media. In the professional environment, WhatsApp groups are created and involve the sharing of information that poses a similar risk to patient confidentiality and privacy as other social media platforms.¹⁶ The convenience of its use makes it an appealing option for communication between colleagues, with instant messaging potentially assisting with patient care as suggested by a survey done at The University Hospital Limerick in Ireland.⁴⁴ Despite the appeal, it is important to protect patient information and privacy and although WhatsApp uses end-to-end encryption, the security of this in group chats has been questioned.⁴⁵ Ideally there should be a medical alternative to WhatsApp that may allow for safer sharing of patient information, but this needs further investigation.⁴⁶

Many doctors are apprehensive when it comes to the use of social media in a professional capacity.^{4,7} Similar sentiments were found in this study, with 51.6% of participants indicating that ethical and legal concerns caution them from using social media in a professional capacity. These concerns are warranted, as even with good intentions, mistakes are made which may jeopardise professionalism or privacy.⁴⁷ It is important to maintain the boundaries between personal and professional life, and social media use in healthcare may cause blurring of these lines.^{13,15} In this study, 17% of participants had received a Facebook friend request from a patient, much the same as the 19.4% that had received requests in another study.⁴ In both this study and the study done by Brown et al.,⁴ the most common response to an actual or potential Facebook friend request was to decline and do nothing more. Patients use physician rating websites to review doctors^{1,10,48,49} and doctors must be aware that even without their own intent, a web presence may be created for them.¹⁰ More than half of the participants in this study indicated that they take measures to curate and control their online profile.

Despite the apprehension to use social media professionally, 85.5% of participants still showed interest in its potential to enhance the profession, with this being a more positive response compared to the 28.7% of participants who were interested in using social media for professional purposes in emergency medicine programs.⁷ Social media use may enhance the profession by allowing for rapid dissemination of knowledge, increasing ease of access to information, enhancing self-education and increasing communication across the specialty. Although there are various forms of social media with varying risks of exposure, it is important to have clear parameters within which to function. When this survey was conducted, there were no official HPCSA social media guidelines and the knowledge of ethical and legal aspects relating to social media use was found to be less than adequate in all age groups, with only 5.7% of participants obtaining an adequate score. Now that the HPCSA social media guidelines²⁵ have been published, there should be an emphasis on educating healthcare professionals about these guidelines early on in their careers in order for them to protect themselves and their patients from potential harm.

There are limitations to this study. There was an uneven distribution of participants in the different generations with the majority falling into the millennial category. This may have biased the results. The study was contextual thus may not be generalisable to other populations.

Conclusion

The large proportion of participants using social media in this study showed that it has a role personally, as well as professionally. It was affirmed that there is a perception of potential for social media to enhance the profession of anaesthesiology and this points towards an exciting future. The lack of knowledge regarding ethical and legal aspects needs to be addressed, especially in light of the fact that so many anaesthetists are engaging with social media professionally. It is essential for

doctors that social media guidelines are ingrained from an early point in their careers.

Conflict of interest


The authors declare that we have no financial or personal relationships which may have inappropriately influenced us in writing this paper.

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