

Anaesthetists' use and ethical and legal knowledge of social media

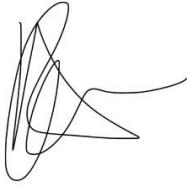
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A research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg in partial fulfilment of the requirements for the degree of Master of Medicine in the branch of Anaesthesiology.

Johannesburg, 2020

Declaration

I, Alyssa Claire Guidozi declare that this research report is my own unaided work. It is being submitted for the Degree of Master of Medicine in the branch of Anaesthesiology at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other University.



21 May 2020

Abstract

Background

The exact role social media has in health care 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 (5.0%) 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; 60.9%). 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 9 (5.7%) participants had adequate knowledge of ethical and legal aspects.

Conclusion

The large proportion of participants using social media showed that 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 in order for them to protect themselves and their patients from potential harm.

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Abbreviations

HPCSA	Health Professions Council of South Africa
SAJAA	Southern African Journal of Anaesthesia and Analgesia
SAMA	South African Medical Association
USA	United States of America

Statement

The Research Report consists of a literature review, draft article, study proposal and appendices. The study proposal is included for background reference and is not for examination.

The formatting of this Research Report complies with the University of the Witwatersrand's Style Guide for Theses, Dissertations and Research Reports. The formatting of the draft article is in keeping with the rest of the Research Report thus may not comply with the author guidelines of the Southern African Journal of Anaesthesia and Analgesia (SAJAA), the journal to which it is intended to be submitted.

Section 1: Review of the literature

1.1 Introduction

This section will classify social media and discuss its general use in South Africa. Literature surrounding social media use in health care will be reviewed, specifically exploring the use amongst doctors and patients. The opinions that doctors have on social media use in health care are explored, as is medical professionalism. The existing social media guidance for doctors and legal aspects relating to social media use in health care are reviewed, followed by a discussion of social media use amongst anaesthetists and guidance specific to them.

1.2 Classification of social media and use in South Africa

The purpose of the creation of the World Wide Web was to increase the ease of sharing of information and the concept of social media has merely re-iterated this purpose.¹ Social media is defined by Kaplan and Haenlein¹ as internet-based applications that allow sharing or “creation and exchange” of user-generated content. User-generated content refers to any form of media that is created and shared by those utilising social media. Social networking sites were started as long as 20 years ago, and with the advancement in internet access, Myspace and Facebook were created in 2003 and 2004 respectively. Kaplan and Haenlein¹ 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.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. Social media use is no longer only in a personal capacity, but also in a professional one, including the health care profession.⁴⁻⁶ Social media platforms are powerful tools for communication owing to the vast number of people engaging with them.

1.3 Use of social media in health care

The exact role social media has in health care is still being defined. Understanding how both doctors and patients use social media is necessary to identify the relevance social media has in health care and the potential consequences of its use. Patients and doctors utilise social media in different ways, either amongst themselves or interacting with each other. Interactions may take place on platforms that are secure with limited access to only their users, such as physician-only or patient-only communities, or on platforms that are public. This is depicted in Figure 1.1. In the figure, the solid line circles represent interactions that are secure and the dotted line circles represent personal networking interactions.

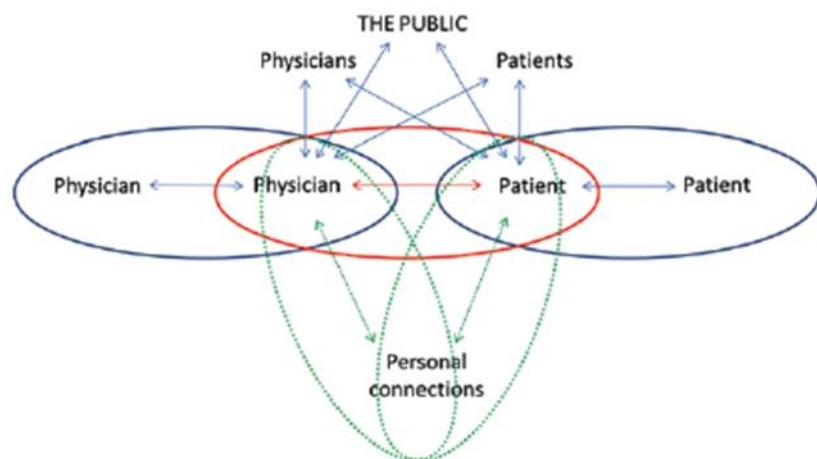


Figure 1.1 – Interactions between patients, doctors and the public on social media⁷

Literature shows that doctors use social media personally,⁸⁻¹² and certain evidence suggests that doctors use it predominantly in this capacity.^{8, 12} There are doctors that also use social media in a professional capacity. Physician-only social networking communities such as SERMO¹³ allow doctors to interact with each other and assist one another with various clinical scenarios, as well as share medical knowledge.⁷ According to the Latin dictionary,¹⁴ the word “sermo” means conversation or discussion which is an appropriate name for this online community. There is a verification process that exists prior to joining and as mentioned on the SERMO website, it is “a place to unite, share and be heard”.¹³ Doximity¹⁵ and doctors.net.uk¹⁶ are other physician-only social networking communities

that also offer a platform for sharing of information, networking and advice. A study done in the United States of America (USA) by McGowan et al.¹⁷ investigated the current and potential use of social media for information sharing amongst primary care doctors and oncologists. Of those that responded, 52% were current users of online physician-only communities with the purpose of sharing medical information within the medical community.¹⁷ Twitter is also used by doctors as a tool for sharing of medical knowledge¹⁸⁻²¹ and communication with colleagues.⁴

Social media may also be used as a tool for medical education. This was evident when Second Life, a virtual world in which users interact and socialise in the form of avatars, proved to be a novel education tool when it was successfully used to teach a group of primary care physicians about type 2 diabetes.²² Medical professionals also access YouTube as a source of medical information⁴ as well as blogs and Twitter.²³ Doctors use social media platforms such as Facebook and Twitter to promote and develop their practices, as shown in a study investigating social media use amongst plastic surgeons in the USA.¹² Some doctors discuss the existence of social media support groups with their patients⁹ or encourage their patients to research their conditions on social media platforms.¹¹ Although they are in the minority, there are physicians who actively use social media in their practices to engage with patients.²⁴ This interaction between doctors and patients on social media seems to be rare, as shown in the previously mentioned Australian study where only one doctor reported having used social media to communicate with patients.⁹ A survey done in the USA⁸ investigating the patient-doctor relationship and online social networks showed that 9% of respondents who use social networking sites had received a Facebook friend request from a patient or patient's family member. The majority of respondents indicated that they declined these requests but some of them reported that the requests would be accepted depending on the case.⁸

When considering how patients use social media, certain groups of patients have been shown to use social media to communicate with other patients and to seek information about their conditions. PatientsLikeMe is an online community where patients with similar medical conditions join and choose to share information pertaining to their illnesses, allowing for learning as well as providing data that may be used for research purposes.²⁵ The site was noted to be beneficial in educating patients about symptoms

they experience, informing them about possible drug side-effects and assisting patients with managing their illnesses.²⁵ Social media platforms may offer support to patients, as shown where a Facebook support group page was created for liver transplant patients which positively impacted the majority of patients who responded to a survey after nine months of the page being active.²⁶ Twitter has also been shown to be a useful tool for giving information and support to breast cancer patients.²⁷ A study conducted in the Netherlands⁴ investigated social media use amongst health care professionals and patients in a department of obstetrics and gynaecology, specifically looking at what the motives for use are, as well as the barriers to use. Of the patients who completed the survey, social media platforms were used by 31.7% for health-related reasons, with Twitter and Facebook being used most commonly, predominantly to increase knowledge.⁴

The information that patients are engaging with on social media is not necessarily useful nor accurate. The usefulness of the content of Facebook groups related to foot care in diabetic patients was investigated²⁸ and it was found that of the posts that were deemed as “informative”, only 27.2% were classified as “useful”. The study concluded that although Facebook has the potential to be a tool for health education, there is a limitation with regards to the content shared.²⁸ The content on YouTube has been evaluated in various studies, investigating the usefulness and the quality of a variety of medical information given.²⁹⁻³² Studies showed that there is varying content present, some showing that high quality videos were in the minority and that information given on YouTube is often not useful and is sometimes inaccurate.^{30, 31} The lack of accurate, pertinent information noted in these studies may be due to the varying sources of the material.³⁰ Health care professionals must be aware that patients may access misleading information and there may be a need to influence the information that is being made available.^{20, 30}

Patients also use physician rating websites to review doctors.^{7, 20, 33, 34} These websites, of which there are many, allow for the sharing of user-generated content in the form of patient reviews, some allowing for the comparison of physicians.³³ Patients are able to use these to assist with decision making. A study involving orthopaedic patients done in the USA³⁴ showed that a physician rating website was used by up to 26% of patients prior

to consulting with their orthopaedic surgeon. Although these rating websites may pose a risk for misinformation and possible defamation, multiple patient ratings that were given to a variety of doctors in various different specialties were analysed and it was noted that the majority of them were, in fact, positive and in favour of the physician.³³ It is important for doctors to be aware that these sites exist, and that even without their own intent, a web presence may be created for them.²⁰

1.4 The opinions that doctors have on social media use in health care

A small group of doctors who actively use social media for health promotion and interaction with patients were interviewed in order to obtain their views on social media use in health care.²⁴ The majority of participants in this study²⁴ consisted of paediatricians and all of the participants had at least one year of experience using social media in a professional capacity for health promotion. The opinions expressed suggested that social media has the potential to advance their careers, enables them to stay up-to-date with the latest research and allows for mass communication, all of which they perceive to be beneficial. Many were of the opinion that social media allows them freedom of expression and is also a platform for self-promotion. It was noted in the study that the majority of the participants publish content that is not peer-reviewed. There were mixed opinions regarding whether or not the participants felt more physicians should be using social media. Some felt that it is an important communication tool that more physicians should be using and others felt that use should be entirely optional, depending on the practitioner and their environment. Even though the participants were deemed to be experienced social media users, the risk of breaching confidentiality or saying something unprofessional was noted to be a barrier to social media use, although not all were in agreement with this.²⁴

The study done by McGowan et al.¹⁷ showed that 58% of participants felt social media assisted with patient care and 60% felt that it improves the quality. Other studies, however, suggested that there is apprehension amongst doctors when it comes to the use of social media in a professional capacity.^{8-10, 12} Most of the doctors who participated in the study by Brown et al.⁹ felt uncomfortable with patients accessing information about them online and felt uneasy dealing with patients who had done so. More than half

felt a personal Facebook account is appropriate, yet only some knew how to adequately protect their personal information online. Only 21.2% of doctors in this study felt it appropriate to engage with patients on social media.⁹ This was echoed in another study,⁸ which showed that the majority of participants felt it inappropriate to interact with patients on online social networks, regardless of the reason. The majority of these participants also felt that communication with patients on online social networks presented the risk of breaching patient confidentiality.⁸ Only 28.7% of emergency medicine residents and faculty members were significantly interested in using social media in a residency environment for professional purposes in a study done in 2015.¹⁰

1.5 Medical professionalism and social media use

The concerns that most health care professionals have regarding social media use in a professional capacity are warranted, as even with good intentions, mistakes are made that may jeopardise professionalism or privacy. The Facebook pages of urology graduates from 2015 were analysed³⁵ and it was noted that 40% of the graduates had “unprofessional or potentially objectionable content”, of which 13% exhibited “explicitly unprofessional behaviour”. Another study, where the professionalism of self-identified physicians using Twitter was described,¹⁸ noted that 3% of tweets were unprofessional and, although a small minority, there were tweets that potentially violated patient privacy. This study emphasised that although the intent is to share medical information in order to have a positive impact, to avoid harm there must be strict adherence to ethical guidelines and maintenance of professional conduct.¹⁸ For these reasons, ethical guidance exists and health care professionals using social media must be cognisant of the guidelines that govern their particular institution. Social media has the potential to be used in a way that can enhance health care but if used incorrectly, may result in extreme harm.

Health care professionals have a specific code of ethics and professionalism that must be adhered to and this remains true for the use of social media.³⁶ The Health Professions Council of South Africa (HPCSA)³⁷ has published good practice guidelines in which it states, “To be a good healthcare practitioner, requires a life-long commitment to sound professional and ethical practices and an overriding dedication to the interests of one’s

fellow human beings and society”.³⁷ Medical professionalism, as mentioned in the Charter of Medical Professionalism³⁸ written by the members of the Medical Professionalism Project, “...demands placing the interests of patients above those of the physician, setting and maintaining standards of competence and integrity, and providing expert advice to society on matters of health”. The Charter³⁸ is based on “three fundamental principles”, which include always acting in the patient’s best interest, respecting patient autonomy and promoting justice in health care. A number of professional responsibilities are also mentioned, two of which include “maintaining appropriate relations with patients” and “commitment to patient confidentiality”.³⁸ It is important to maintain the boundaries between personal and professional life and social media use in health care may cause blurring of these lines.^{36, 39}

Doctors are held to the same standards of professionalism regardless of whether the patient-doctor interaction is in person or online.^{40, 41} This being so, it may sometimes be difficult to identify where the line should be drawn and what behaviour may be considered as unprofessional. Greysen et al.⁴² discuss the factors that may make it difficult for medical professionals to maintain their principles of medical professionalism online. It is suggested that some doctors may not necessarily realise what is deemed as unprofessional behaviour online, and that people may be disinhibited when using social media, resulting in expression of content that may not have otherwise been expressed face to face. This may lead to violations of confidentiality.⁴² The authors also emphasise the impact that one momentary unprofessional post can have based on the reach of social media, and this can be damaging to the individual but also the profession as a whole.⁴²

1.6 Guidance for social media use in health care

Guidance to help doctors maintain professionalism whilst using social media has been offered by various different international organisations.⁴³⁻⁴⁸ This guidance has evolved as technology and social media have evolved and will continue to do so as new social media platforms are developed. There are key elements mentioned in the various guidance given.⁴³⁻⁴⁸

- Maintaining privacy and being aware that privacy settings may be limited thus care should be taken when considering what to post on social media.
- Separating personal and professional content on social media.
- Ensuring patient confidentiality and acknowledging that even when anonymity is kept, other shared information may allow for patient identification and this must be avoided.
- Maintaining professional boundaries with patients.
- Respecting colleagues on social media.
- Being aware that any content posted is subject to the same defamation laws.
- Actions online may have future implications and may affect reputation.

There is also some specific guidance given.

- Public social media platforms should not be used to discuss individual patient health care, whether it be about a patient or to a patient.⁴⁴
- There should be caution when giving medical advice on social media as there is risk associated with giving personalized health advice to members of the public.⁴⁵
- Inter-professional boundaries should be considered on social media.⁴⁷
- Doctors should monitor what content exists about them online.⁴³
- Unprofessional conduct of colleagues should be monitored and should ideally be dealt with discreetly.^{43, 47}
- Consent should be obtained prior to taking or sharing images of patients.⁴⁵
- Honesty regarding any conflict of interests or financial interests.^{43-46, 48}

Prior to 2019, guidance for social media use amongst doctors in South Africa could be obtained indirectly from the HPCSA^{37, 49, 50} as well as from social media guidance that has been published on the website of the South African Medical Association (SAMA).⁴⁸

Booklet 1³⁷ of the HPCSA's "Guidelines for Good Practice in the Healthcare Professions" is entitled "General Ethical Guidelines for the Healthcare Professions" and contains the "core ethical values and standards for good practice" which can be applied to the use of social media. Booklet 3⁴⁹ includes the "National Patients' Rights Charter", which mentions the right to confidentiality and privacy, that also applies to social media use.

Confidentiality is elaborated on in Booklet 5.⁵⁰ SAMA has published guidance on social

media use for doctors and medical students, including similar key elements to those mentioned in other international guidelines.⁴⁸ In the latter half of 2019, the HPCSA published Booklet 16⁵¹ entitled “Ethical guidelines on social media”. These guidelines are comprehensive and have incorporated aspects from the other international guidelines mentioned⁴³⁻⁴⁵ as well as the SAMA guidance.⁴⁸

These guidelines⁵¹ 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.

- All patients have the right to privacy and confidentiality. Patient information may be shared by health practitioners in publicly accessible media only if the written consent of the patient has been obtained, regardless of perceived identifiable data.
- In the case of a child younger than 12 years old, written consent from parents or guardians is obligatory as well as assent from the child.
- Data that is shared on social media for the sake of diagnosis, treatment or education must ensure that the patient is not identifiable and that disclosure of information is kept to the minimum.
- Information should be kept confidential, even in the instance of death.
- Patient-doctor interaction on social media may cause blurring of boundaries of the patient-doctor relationship. Health practitioners are advised not to interact with patients on social media platforms.
- Boundaries should be maintained by keeping personal and professional social media accounts separate.
- If an inappropriate message is received from a patient on social media, the health practitioner should re-establish professional boundaries and explain the reasons for doing so.
- Health practitioners should not post negative opinions of colleagues on social media.

- Certain activities such as taking photographs during surgery and making derogatory or prejudiced comments about individuals or patients should be avoided.

1.7 Legal aspects of social media use in health care

If practitioners choose to use social media in a professional capacity, they must be aware of the laws governing personal information and privacy.⁴⁰ The right to privacy is included in the Bill of Rights in Chapter 2 of the South African Constitution (Act No. 108 of 1996),⁵² and with this is the right patients have to confidentiality included in The National Health Act (Act No. 61 of 2003).^{41, 53} Any infringement of these rights may result in legal recourse. It is the responsibility of all health care professionals to uphold and protect these rights.⁵⁰ Health care professionals are also responsible for protecting their patients' personal information and ensuring there is no improper disclosure of information.⁵⁰ The Protection of Personal Information Act (Act No. 4 of 2013)⁵⁴ governs this. The Act refers to all recorded information, "regardless of form or medium", thus preventing the sharing of any photographs of patients without proper consent.⁵⁴ The patient-doctor relationship is based on trust where patients divulge personal information that is required for efficient management, placing them in a position of great vulnerability, thus patient-doctor confidentiality and respecting a patient's right to privacy is paramount.^{40, 50} Unprofessional conduct may result in disciplinary action by the HPCSA in accordance with the powers given under the Health Professions Act (Act No. 56 of 1974).⁵⁵

1.8 Social media use amongst anaesthetists

Anaesthetists are commonly at the forefront of technology and it is necessary to consider how they are using social media.⁵⁶ Anaesthesiology is a specialty that is rapidly evolving and efficient sharing of current research and literature is necessary. Anaesthesia journals such as "Anesthesiology", "Anesthesia and Analgesia" and "Anesthesia" are regular contributors to Twitter feeds, allowing for increased exposure of current literature.⁵⁷ It has been noted that anaesthesia journals that have a "highly-performing Twitter account" had an associated increase in impact factor since involvement on Twitter.⁵⁸ Twitter is also being used as a tool for enhancement of conferences, allowing for an increased reach and

offering “remote participation”.^{57, 59} There are also Twitter-based journal clubs specific to anaesthesia that allow for discussions and sharing of knowledge.^{57, 59, 60} The ability to share videos and images on platforms such as YouTube and Facebook has allowed for social media to be used as an education tool in the field of regional anaesthesia.⁵⁹ Wilkinson et al.⁶¹ discuss the potential for social media use in critical care and the power these platforms have in creating professional networks and allowing for the dissemination of knowledge. Although there is a suggested role for social media in anaesthesia, there is limited identifiable research on whether or not anaesthetists are, in fact, utilising these social media tools.

The Royal College of Anaesthetists acknowledges the potential benefit of social media use by doctors and offers guidelines for fellows and members who use social media.⁶² These guidelines refer to the General Medical Council’s social media guidance for doctors⁴⁴ and highlight the same principles of confidentiality, privacy, respecting colleagues, maintaining boundaries and avoiding public social media platforms to discuss patients.⁶² The Royal College of Anaesthetists also emphasises the need to comply with employer-specific guidelines.⁶²

1.9 Summary

There are positive aspects to social media use in health care, with the potential for these platforms to enhance health care delivery, but there are also barriers to its use. The social media network includes both patients and doctors who may at times have unwanted access to one another’s activities which may result in harmful consequences. This being said, it cannot be denied that social media is being used and a better understanding of the use amongst doctors, and in this case, anaesthetists, is necessary. The opinions that anaesthetists have on social media use should also be explored, as well as their knowledge of current guidelines and laws that exist to ensure professionalism is maintained.

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Acknowledgements

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The following are sample references:

1. Jun BC, Song SW, Park CS, Lee DH, Cho KJ, Cho JH. The analysis of maxillary sinus aeration according to aging process: volume assessment by 3-dimensional reconstruction by high-resolucional CT scanning. *Otolaryngol Head Neck Surg.* 2005 Mar;132(3):429-34.

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<http://www.journals.uchicago.edu/ICHE/journal/issues/v27n1/2004069/2004069.web.pdf>.

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Section 3: Draft article

Anaesthetists' use and ethical and legal knowledge of social media

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Key words: Social media; anaesthesiology and social media; ethical guidelines; knowledge of guidance

Abstract

Background

The exact role social media has in health care 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 (5.0%) 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 9 (5.7%) participants had adequate knowledge of ethical and legal aspects.

Conclusion

The large proportion of participants using social media showed that 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.

Introduction

The field of medicine is one that is constantly evolving with advancements in many spheres, and health care 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 health care 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 health care 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 health care 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.²⁴ In the latter part of 2019, the HPCSA published social media guidelines for health care 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 Health care 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. It is suggested that social media is being used within the profession 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 maintaining professionalism and patient confidentiality. The aim of this study is to describe how anaesthetists 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

Approval was obtained from the Human Research Ethics Committee (Medical) and other relevant authorities. 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, 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

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. 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).³³ 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. 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. 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.^{34, 35} 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 anaesthetists in the department. The demographics of the participants are shown in Table I.

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	0.6
	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

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, 2 (25%) participants were in the 23 – 41 years age group, 3 (37.5%) were in the 42 – 53 years age group and 3 (37.5%) were in the 54 – 72 years age group. The social media platforms used personally and professionally are shown in Figure 1.

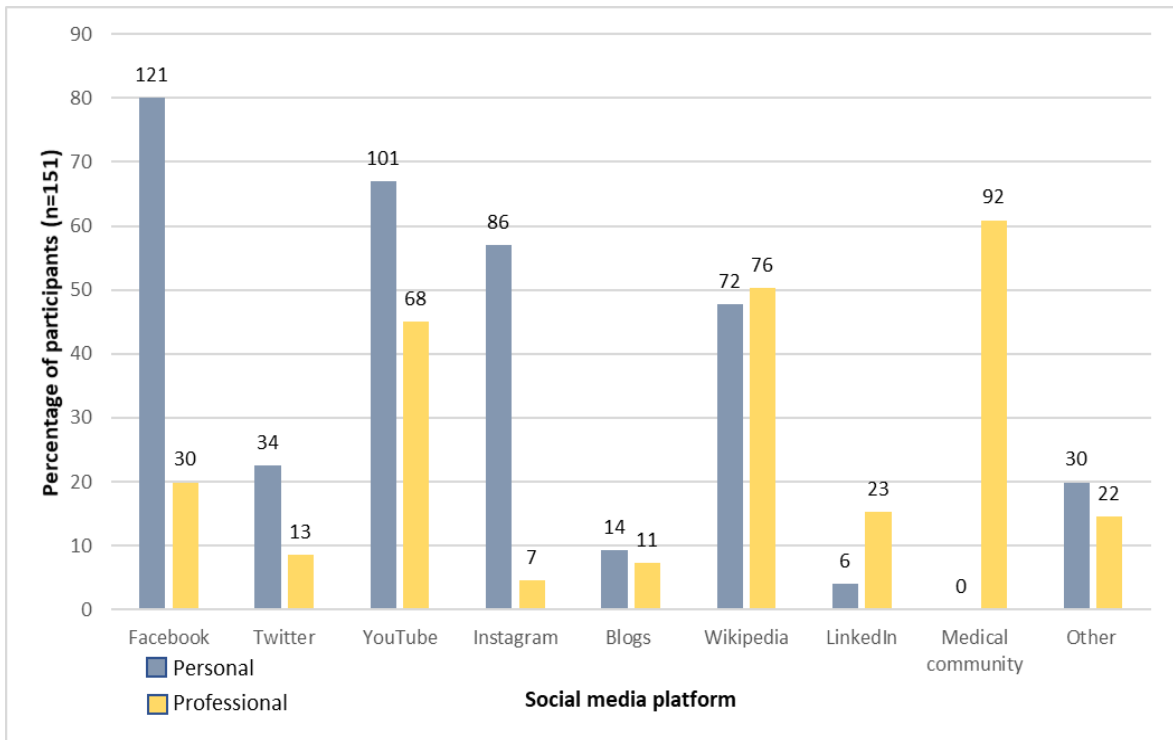


Figure 1 – Social media platforms used for personal and professional reasons

Participants were given an opportunity to list other platforms used for personal and professional reasons. WhatsApp was written by 21 (13.9%) participants, with 6 (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%).

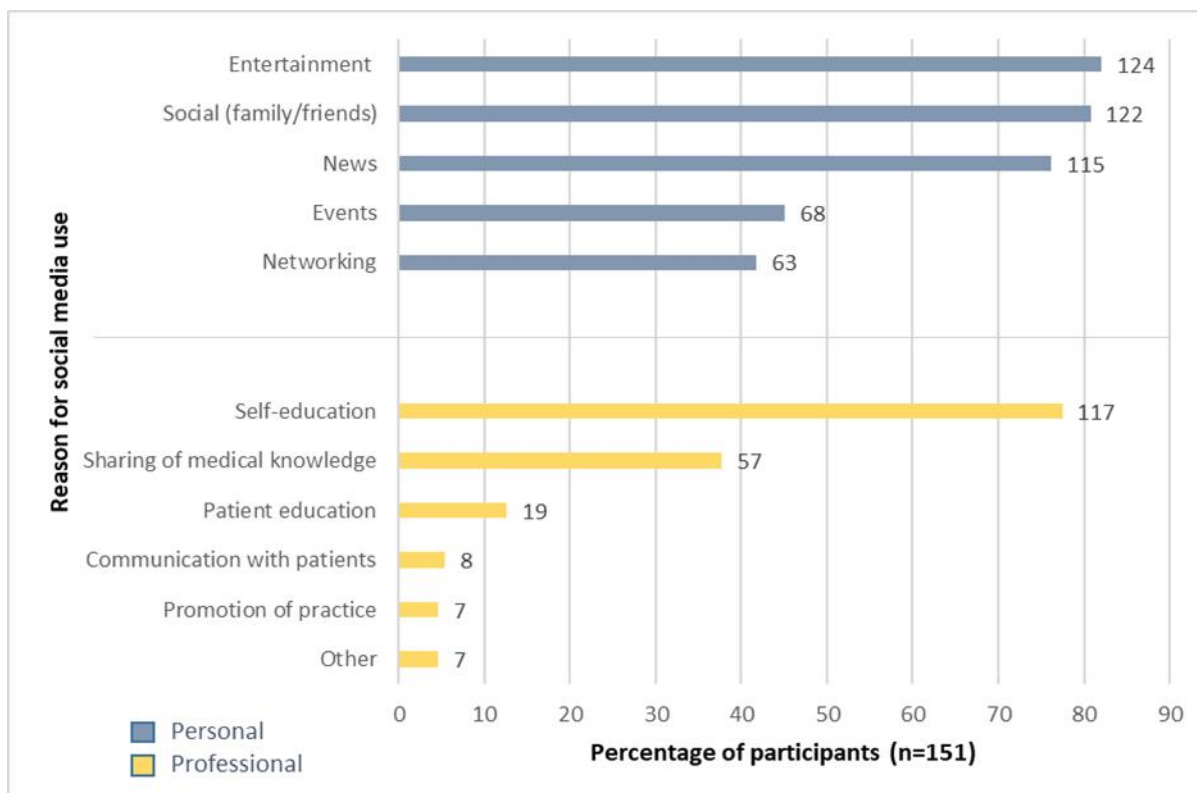


Figure 2 – Reasons for professional and personal social media use

Frequency of social media use for both personal and professional reasons is shown in Table II. These results include those participants that 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.

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)

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 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 that frequently used social media for personal reasons compared to 12 (54.5%) participants aged 42 years or older that 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.

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)

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

The results of the knowledge questions showed that only 9 (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.

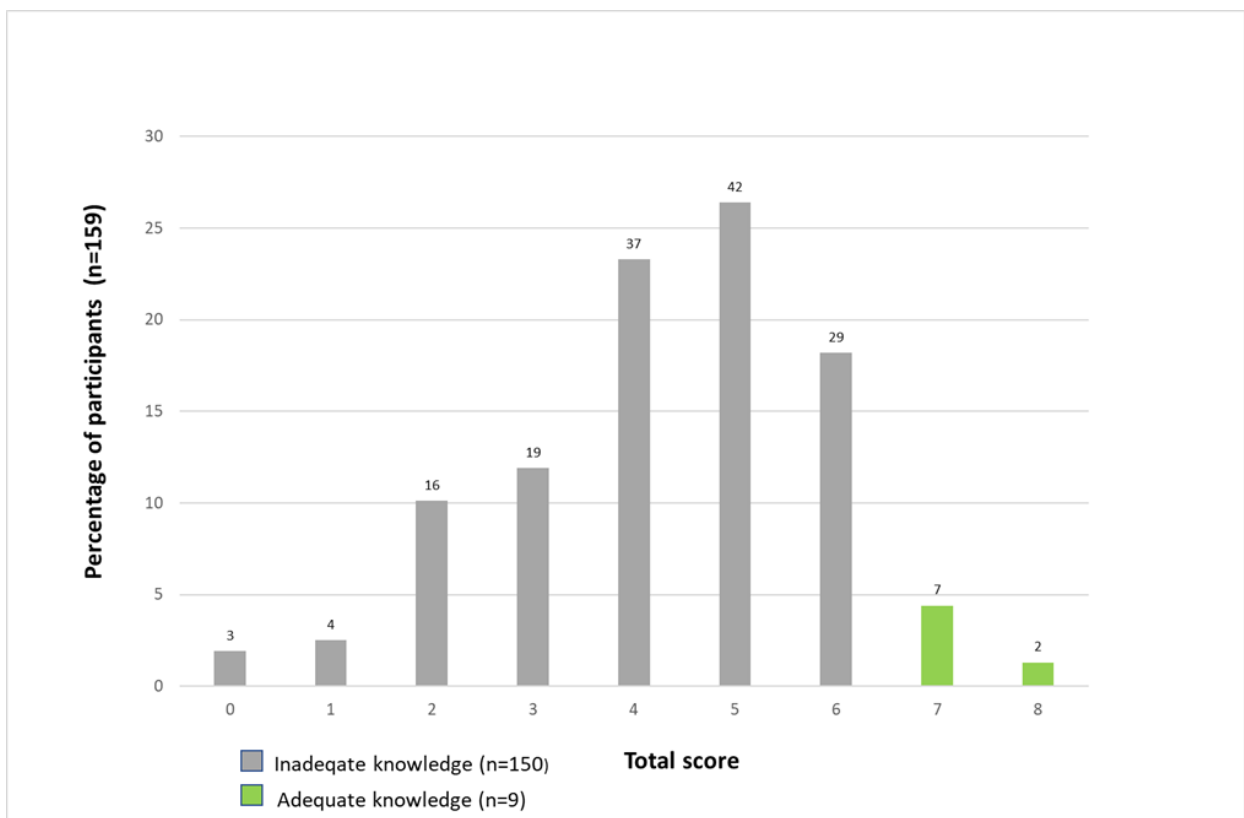


Figure 3 – Knowledge scores

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.

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 one form or another, 95% of participants in this study use social media, being the highest use noted in the identifiable relevant literature.^{4-7, 36, 37} This being said, most of the other studies^{4, 6, 7, 36, 37} had a more even age distribution of participants, compared to this study where 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 Centre³⁸ 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 were found to use social media more frequently for personal use than the older generations. Brown et al.⁴ and Surani et al.³⁷ noted similar associations between age and social media use. What is interesting is 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 to this study as another study done in the United Kingdom in 2008 showed that 70% of physicians who participated used Wikipedia to search for medical information.³⁹ Anaesthetists require fast, easy access to a vast amount of constantly evolving information. As acknowledged by Van Zundert et al. in 2016,⁴⁰ the ever evolving content in the specialty makes it challenging for anaesthetists to keep up to date with the latest literature, despite efforts to do so. 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.⁴⁰ This brings to light the concept or “ethos” of free open access medical education (FOAM) which involves a community that promotes the wide spread sharing and collaboration of resources and knowledge through various different media, including social media platforms such as Facebook groups and Twitter, in order to augment medical education.⁴¹ There are advantages and disadvantages to FOAM, one of the disadvantages being the variability in the quality of content.⁴²

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.⁴³ 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.⁴⁴ Ideally there should be a medical alternative to WhatsApp that may allow for safer sharing of patient information but this needs further investigation.⁴⁵ Medical communication apps such as SignApps and Vula are POPI compliant and allow for sharing of patient data. Whether or not these are being used and the potential for them to replace WhatsApp would need to be explored.

Evidence suggests that 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 to an extent, as even with good intentions, mistakes are made which may jeopardise professionalism or privacy.⁴⁶ It is important to maintain the boundaries between personal and professional life and social media use in health care 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, 47, 48} 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 Although there are various forms of social media with varying risks of exposure, it is important to have clear parameters within which to function. At the time that this study was done, 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 health care 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 and thus may not be generalisable to other populations. Further research in this field is needed to inform and influence practice.

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 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, from an early point in their careers, social media guidelines are ingrained as social media is here to stay.

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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Section 4: Proposal

Anaesthetists' use and ethical and legal knowledge of social media

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4.1 Introduction and problem statement

The field of medicine is one that is constantly evolving with advancements in many spheres and health care 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 exponentially over time. According to statistics from the South African Social Media Landscape 2017 study,² 14 million South Africans are using Facebook, 7.7 million are using Twitter, YouTube has 8.74 million users, Instagram has 3.5 million users and LinkedIn has 5.5 million. These platforms are a powerful tool for communication owing to the vast number of people engaging with them. Social media use is no longer only in a personal capacity, but also in a professional one, including the health care profession.³

The exact role social media has in health care 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 within the health care system there are both patients and doctors engaging with social media. Patients and doctors utilise social media in different ways, either amongst themselves or interacting with each other on platforms that are either secure or public.¹ Understanding how both patients and doctors use social media amongst themselves and with each other is necessary to identify the relevance social media has to doctors and the consequences of its use.

Seeking health care information from the internet is not a new concept and the utilisation of social media platforms to access health information has added a new dimension to this. According to a report of a national survey performed in the United States of America in 2010 by the Pew Internet and American Life Project, 15 % of adults who used social media used it as a source of health information.⁴ Certain groups of patients have been shown to use social media to communicate with other patients and to seek information about their conditions^{1, 5-8} and social media platforms may be used to form patient support groups.⁵ Doctors must be aware that patients use social media for these purposes and may at times access misleading or inaccurate information.⁹⁻¹¹ Patients also use physician rating websites to review doctors.^{1, 11-13} It is important for doctors to be

aware that these sites exist, and that even without their own intent, a web presence may be created for them.¹¹

Aside from the use of social media for personal purposes,¹⁴⁻¹⁶ it is suggested that doctors may use social media for various professional purposes. These include sharing of medical information,^{1, 17} education of health care professionals,^{11, 18, 19} offering support amongst doctors, as a tool for patient education,¹⁴ to promote physician practices,²⁰ and in a small minority, to engage directly with patients in health promotion.²¹⁻²³ There were only a limited number of studies identified that investigated how social media is being used by doctors.

Although social media use by doctors may be beneficial and allow for efficient information sharing,¹⁷ evidence suggests that many doctors are apprehensive when it comes to the use of social media in a professional capacity and patient-doctor interaction online.^{14, 15, 20, 23} It has been shown that most doctors felt it inappropriate to engage with patients on social media.^{14, 23} These concerns are warranted to an extent, as even with good intentions, mistakes are made which may jeopardise professionalism or privacy.²⁴ It is important to maintain the boundaries between personal and professional life and social media use in health care may cause blurring of these lines.^{22, 25} For these reasons, ethical guidance exists and health care professionals using social media need to be aware of them.

International guidance to help doctors maintain professionalism whilst using social media has been offered by various different organisations such as the American Medical Association,²⁶ the British Medical Association,²⁷ the General Medical Council in the United Kingdom²⁸ and the Canadian Medical Association.²⁹ In South Africa guidance can be obtained from the Health Professions Council of South Africa³⁰⁻³² as well as from social media guidance that has been published on the website of the South African Medical Association.³³ Doctors must also be aware of the laws governing personal information and privacy as these relate to social media use and sharing of patient information online. The right to privacy is included in the Bill of Rights in Chapter 2 of the South African Constitution (Act No. 108 of 1996),³⁴ and with this is the right patients have to confidentiality included in The National Health Act (Act No. 61 of 2003).³⁵ Health care

professionals are responsible for protecting their patients' personal information and ensuring there is no improper disclosure of information.³² The Protection of Personal Information Act (Act no. 4 of 2013)³⁶ governs this. The Act refers to all recorded information, "regardless of form or medium".³⁶ The sharing of photographs on social media, specifically Instagram, is done frequently. It is the responsibility of health care professionals to protect all personal information of their patients, including not sharing photographs of patients without proper consent.

Anaesthesiology is a specialty that is rapidly evolving, often incorporating the latest technology into practice. Efficient sharing of current research and literature is necessary. Social media is being used to enhance the profession evidenced by journals such as "Anesthesiology", "Anesthesia and Analgesia" and "Anesthesia" regularly contributing to Twitter feeds,³⁷ Twitter being used as a tool for enhancement of conferences^{37, 38} and YouTube and Facebook being used as an education tool in the field of regional anaesthesia.³⁸ Although there is a suggested role for social media in anaesthesiology, limited research has been identified on whether or not anaesthetists 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 maintaining professionalism and patient confidentiality.

4.2 Aim and objectives

4.2.1 Aim

The aim of this study is to describe how anaesthetists working in 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.

4.2.2 Objectives

The primary objectives of this study are to describe:

- the social media platforms that are being used
- social media use in a personal capacity
- social media use in a professional capacity

- the knowledge of ethical and legal aspects relating to social media use.

The secondary objectives are to compare:

- use of social media in different age groups and sexes
- adequacy of knowledge in different age groups.

4.3 Research assumptions

The following definitions will be used in this study.

Anaesthetist: is any qualified doctor working in the Department of Anaesthesiology including interns, medical officers, registrars and consultants.

Intern: is a doctor who completed a university degree but is currently undergoing practical training prior to registration with the Health Professions Council of South Africa as an independent practitioner.

Medical Officer: is a qualified doctor practising in the Department of Anaesthesiology under specialist supervision. Medical officers with more than 10 years of experience are career medical officers and are regarded as consultants.

Registrar: is a qualified doctor who is registered with the Health Professions Council of South Africa as a trainee anaesthetist.

Consultant: is a specialist anaesthetist or career medical officer.

Social media: is defined as internet-based applications that allow the sharing, or “creation and exchange”, of user-generated content.³⁹

User-generated content: refers to various forms of content that are created and shared by those utilising social media.³⁹

Facebook: is a social networking website allowing users to create a profile, befriend and share content with other users.⁴⁰

YouTube: is a video hosting platform that allows users to watch videos and playlists that other users have created as well as upload and share video content.⁴⁰

LinkedIn: is a social networking tool where the user's profile reads like an online curriculum vitae, allowing the user to establish professional networks and explore employment opportunities.⁴⁰

Twitter: is a content-sharing and micro-blogging site that limits posts to 140 characters in length, enabling users to 'follow' other users of interest. Posts may include text, photos, videos and links.⁴⁰

Instagram: is a photo and short video sharing social networking service for mobile devices.⁴¹

Wikipedia: is a free web-based encyclopaedia that is a collaborative project which enables the joint and simultaneous creation of content by many end-users.^{39, 41}

Blog: is an online commentary presented chronologically, usually managed by one person but allows for interaction with others through the addition of comments.^{39, 41}

Adequate knowledge: in this study will be regarded as a score of 7 out of 9 (78%) and more.

4.4 Demarcation of study field

The study will be conducted in the Department of Anaesthesiology, affiliated to the Faculty of Health Sciences of the University of the Witwatersrand. The staff complement of the department is 53 interns, 74 consultants, 112 registrars and 22 medical officers. The following hospitals are affiliated to the department.

- Charlotte Maxeke Johannesburg Academic Hospital a 1200 bed central hospital.
- Chris Hani Baragwanath Academic Hospital a 2888 bed central hospital.
- Helen Joseph Hospital a 500 bed tertiary hospital.
- Rahima Moosa Mother and Child Hospital a 338 bed regional hospital.
- Wits Donald Gordon Medical Centre a public private hospital with 190 beds.

The following regional hospitals are also affiliated to the Department of Anaesthesiology at the University of the Witwatersrand as these hospitals are included in an extended teaching program for interns rotating through the department.

- Far East Rand Hospital
- Sebokeng Hospital
- Tambo Memorial Hospital
- Pholosong Hospital
- Thelle Mogoerane Hospital
- Leratong Hospital
- Edenvale Hospital

4.5 Ethical considerations

Approval to conduct the study will be obtained from the Human Research Ethics Committee (Medical) and the Graduate Studies Committee of the University of the Witwatersrand.

This study uses an anonymous self-administered questionnaire (Appendix 1) with consent implied on completion of the questionnaire. The researcher will approach potential participants at departmental academic meetings where the study will be explained and invite them to take part. Those who agree will receive an information letter (Appendix 2) and the questionnaire.

Anonymity will be maintained by collecting data without identifying information and assigning study numbers to collected data. Completed questionnaires will be placed in a sealed box at the door. Only the researcher and the supervisors will have access to the raw data thus confidentiality will be ensured.

If the results show that knowledge of ethical and legal aspects relating to social media use is inadequate with the majority of participants scoring less than 7 out of 9 for the knowledge questions, the researcher will organise the distribution of a correct answer sheet with relevant guidance on the use of social media by anaesthetists.

The raw data will be stored securely for six years after the completion of the study in a locked cupboard. The study will be conducted according to the principles of the Declaration of Helsinki⁴² and the South African Guidelines for Good Clinical Practice.⁴³

4.6 Research methodology

4.6.1 Research design

A prospective, contextual, descriptive research design will be followed in this study.

A prospective study is one where the collection of data takes place first and this is then followed by measurement of an effect or outcome.⁴⁴ This study is prospective as data will be collected from participants and once that is completed, an outcome will be measured.

A contextual study is one where a specific participant context or environment is focussed on.⁴⁵ In this study, only anaesthetists working in the Department of Anaesthesiology at the University of the Witwatersrand will be included.

A descriptive study describes the characteristics of a sample without manipulating variables or determining relationships between variables.⁴⁴ This study will describe how anaesthetists are using social media as well as their knowledge of the ethical and legal aspects relating to social media use.

4.6.2 Study population

The study population will consist of all anaesthetists working in the Department of Anaesthesiology at the University of the Witwatersrand.

4.6.3 Study sample

Sample size

The department consists of 53 interns, 22 medical officers, 112 registrars and 74 consultants. Questionnaires will be administered to the entire accessible population. A response rate of 60% is considered as acceptable.⁴⁶ This will be 157 completed questionnaires.

Sampling method

In this study, a convenience sampling method will be used. Convenience sampling involves selecting participants that happen to be available to the researcher at the time of sampling.⁴⁷ This study will sample participants that are anaesthetists in the Department of Anaesthesiology that attend departmental academic meetings.

Inclusion and exclusion criteria

The inclusion criterion for this study is any anaesthetist working in the Department of Anaesthesiology at the University of the Witwatersrand who is willing to partake in the study.

There will be no exclusion criteria.

4.6.4 Data collection

Questionnaire development

Based on an extensive literature review two questionnaires were identified that are useful for this study. The first was taken from a study by Pearson et al.¹⁵ published in 2015 and the second from Brown et al.¹⁴ published in 2014. Permission to use and adapt these questionnaires was obtained from these authors (Appendix 3). The questionnaires were modified to contextualise the study to the South African environment. 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 (Appendix 1) consists of five sections. Section 1 includes the demographics of the participants. Section 2 focuses on how anaesthetists use social media in a personal capacity and Section 3 focuses on how anaesthetists use social media in a professional capacity. Section 4 includes questions testing the participant's knowledge of ethical and legal aspects relating to social media use. Finally, the questions in section 5 ask 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.

Data collection

Data will be collected at departmental academic meetings. The convenor of the meeting will be approached by the researcher and permission to address the attendees will be requested. The researcher will provide information about the study and invite attendees to participate. Those who agree will be given the information letter (Appendix 2) and the questionnaire (Appendix 1). The researcher will remain at the meeting to be available to answer any questions and to prevent data contamination. Once completed, the questionnaire will be placed into a sealed box. Each questionnaire will be assigned a number. Questionnaires that are returned blank will also be assigned a number and included for response rate calculation but not for data interpretation.

4.6.5 Data analysis

Data will be captured onto spreadsheets using Microsoft Excel 2016. Data will be analysed in consultation with a biostatistician using STATA version 15 (StataCorp, USA). Descriptive and inferential statistics will be used. Categorical variables will be described using numbers and percentages. Social media use will be divided into “infrequent” and “frequent”. “Infrequent” will be regarded as the use of platforms once a month or less. “Frequent” use will be regarded as the use of platforms once a week or more. Associations will be tested using chi-square tests or Fisher’s exact tests. In order to perform these tests, age categories will be grouped into two groups, as will the frequency of social media use as described. Discrete data obtained from the results of the knowledge questions will be presented as a median and interquartile range. A p-value of < 0.05 will be considered significant.

4.7 Significance of the study

The use of social media has increased exponentially and these platforms are being used for means that are not only personal but also professional.³ The role social media has in health care is still being defined but it cannot be denied that both patients^{1, 5-8} and doctors^{14, 17, 21, 23} are engaging in its use. The extent of use amongst doctors, specifically anaesthetists, is not clear. Further studies are needed as identifying how social media is currently being used by anaesthetists will give insight into whether or not it can be used

to enhance the profession further. It is also important to know the extent of knowledge relating to the ethical and legal aspects of social media use by doctors as it is only with this knowledge that social media can be used responsibly and effectively in health care. The results may indicate where further education and guidance is needed.

4.8 Validity and reliability of the study

The validity of a study refers to the extent of the accuracy of the conclusions drawn and the degree to which they are “well-founded”.⁴⁸ Reliability of the study refers to the consistency of the result.⁴⁹

The validity and reliability of the study will be maintained by:

- using a questionnaire based on previously published questionnaires that has face and content validity, and adapted to the context of the Department of Anaesthesiology at Wits;
- targeting a response rate of at least 60% of the department;
- the researcher will be present to answer questions and prevent data contamination;
- creating a non-threatening environment by placing completed questionnaires into a sealed box to ensure anonymity;
- reviewing 10% of data entered to ensure that a high quality of data entry is maintained and
- analysing data in consultation with a biostatistician.

4.9 Potential limitations

The study will be performed in the Department of Anaesthesiology at the University of the Witwatersrand only and may not be a true reflection of anaesthetists in general and the results may not be generalisable to other anaesthesiology departments.

A convenience sample method will be used which may result in bias as those included may not accurately represent the whole population of anaesthetists in the department.⁴⁷

4.10 Project outline

4.10.1 Time frame

Activity	June 2018	Aug 2018	Sept 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	March 2019	April 2019	May 2019
Proposal Preparation											
Proposal submission											
Ethics approval											
Postgraduate approval											
Data collection											
Data analysis											
Draft article											
Submission											

4.10.2 Budget

Item	Number	Cost	Total
Printing	1200	R1 per page	R1200
Binding	3	R150	R450
Total			R1650

The Wits Department of Anaesthesiology will incur the costs of paper and printing.

4.11 References

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4.12 Appendices

Appendix 1: Questionnaire

Anaesthetists' use and ethical and legal knowledge of social media

In all of the following sections, please indicate with a

Section 1: Demographics

1.1	Male	
	Female	

1.2	Age (years)	<23	23-41	42-53	54-72	>72

1.3	Practice type	Mostly private	Mostly public	Public and private	Other

If other please specify _____

1.4	Professional designation	Intern	Medical officer	Registrar	Consultant

1.5	Years of experience	<5	5-10	11-20	>20

Section 2: Social media for personal use

2.1	Which social media platforms do you utilise for personal use?	
	Facebook	
	Twitter	
	YouTube	
	Instagram	
	Blogs	
	Wikipedia	
	Other	
	None (I don't use social media)	

If other please specify _____

2.2	How often do you utilise social media for personal use?	
	Never	
	Infrequently enough to forget my password	
	Monthly	
	Weekly	
	Several times a week	
	Daily	
	Several times a day	

2.3	How do you utilise social media for personal use? Indicate all that apply.					
	News	Entertainment	Events	Networking	Social (family/friends)	I don't use social media

Section 3: Social media for professional use

3.1	Which social media platforms do you utilise for work-related reasons?	
	Facebook	
	Twitter	
	YouTube	
	Instagram	
	Blogs	
	Wikipedia	
	LinkedIn	
	Restricted professional online communities (e.g. SERMO, Medscape etc.)	
	Other	
	None (I don't use social media)	

If other please specify _____

3.2	How often do you utilise social media for professional use?	
	Never	
	Infrequently enough to forget my password	
	Monthly	
	Weekly	
	Several times a week	
	Daily	
	Several times a day	

3.3	How do you utilise social media for professional use? Indicate all that apply.					
	Sharing of medical knowledge	Self-education e.g. for regional anaesthesia	Promotion of practice	As a tool for patient education	To communicate with patients	I don't use social media for professional use

Are there any other ways in which you utilise social media for professional use?

3.4 Have you ever received a friend request from a patient on Facebook?

Yes	
No	

3.5 If you were to receive a friend request from a patient, what would your response be?

A)	Accept the request	
B)	Decline the request and do nothing more.	
C)	Decline the request and send a private message explaining why.	
D)	Do nothing.	

3.6 Are you aware of the results that appear when you Google your full name?

Yes	
No	

3.7 Do you currently take measures to curate and control your online profile?

Yes	
No	

3.8 If there were photos of you online that you didn't want patients or colleagues to see, would you know what to do in order to remove them?

Yes	
No	

Section 4: Knowledge of ethical and legal aspects relating to social media use

4.1 Please indicate all that apply.

Which of the following are laws and ethical guidelines that relate to the use of social media by doctors?		
A)	Chapter 2 of the South African Constitution	
B)	SASA practice guidelines 2018	
C)	National Health Act	
D)	HPCSA ethical guidelines "Confidentiality: Protecting and Providing Information"	
E)	Protection of Personal Information Act	
F)	Health Professions Act	
G)	HPCSA ethical guidelines "General Ethical Guidelines for Good Practice in Telemedicine"	

4.2 Please indicate the single best answer.

4.2.1

The South African Medical Association recommends that:		
A)	doctors may accept friend requests from patients with whom they would like to discuss medical issues further, on social media.	
B)	doctors should not accept Facebook friend requests from current or former patients.	
C)	doctors may accept Facebook friend requests from former patients but not current patients.	
D)	doctors may accept Facebook friend requests from some patients who they would like to engage with outside of work.	

4.2.2

The South African Medical Association recommends that:		
A)	it is inappropriate to post derogatory comments about other doctors on public forums.	
B)	derogatory comments about other doctors may be posted on public forums if the details of the doctor in question are kept anonymous.	
C)	derogatory comments about other doctors may be posted on public forums, as long as this is done under a pseudonym.	
D)	it is appropriate to post derogatory comments about other doctors on public forums as this is in the public's interest.	

4.2.3

The following should occur before posting a photograph on Instagram of a brave 6-year-old paediatric burns patient who is awaiting theatre:		
A)	Verbal informed consent from the child alone should be obtained before the photo is posted.	
B)	Verbal informed consent from the parent or guardian should be obtained before the photograph is posted.	
C)	Written informed consent from the parent or guardian should be obtained before the photo is posted.	
D)	Written informed consent from the parent or guardian should be obtained before the photo is posted and steps to maintain anonymity of the child should be taken.	

4.2.4

After having a bad day at work because of a poor patient outcome, you take to social media to share your experience. The following statement is most correct:		
A)	A detailed post of the event is permitted as long as the name of the patient is kept anonymous.	
B)	A detailed post of the event is permitted as your social media account is private.	
C)	A detailed post of the event is permitted if identifying information is omitted and consent is obtained from the family.	
D)	A detailed post of the event is permitted if the name of the patient is kept anonymous and you only mention the hospital name.	

Section 5: Reaction to social media use

5.1 Do the ethical and legal concerns relating to social media use prevent you from using it in a professional capacity? Please indicate.

Yes	
No	

5.2 Do you feel there is potential for utilising social media to enhance our profession? Please indicate.

Yes	
No	

5.3 Have social media platforms assisted with your learning in anaesthesia?

Yes	
No	

Thank you for completing this questionnaire. Your time is greatly appreciated!

Appendix 2: Information sheet

Dear Colleague,

Hello, my name is Alyssa Guidozi and I am a registrar in the Department of Anaesthesiology at Wits. I would like to invite you to participate in my M Med research study titled “Anaesthetists’ use and ethical and legal knowledge of social media”. Identifying how social media is currently being used by anaesthetists will give insight into whether or not it can be used to enhance our profession further. Knowledge of ethical and legal aspects relating to its use is necessary as it is only with this knowledge that social media can be used by anaesthetists responsibly and effectively.

This will be determined by a self-administered questionnaire. Participation is completely voluntary and consent will be implied by your completion and return of the questionnaire. Information will be kept confidential and anonymous as none of your personal details will be required and only my supervisors and I will have access to the raw data. There is no penalty for not participating in the study and you may withdraw at any time before returning the questionnaire. Completing the questionnaire should not take longer than 10 minutes. You are encouraged not to share information as this may produce inaccurate results. No incentives will be provided for completing the questionnaire.

Kindly return all questionnaires, whether completed or not, into the box marked “returned questionnaires” at the door. The numbering of questionnaires is simply for determining the response rate and for data capturing purposes. Please ensure that you understand the above information prior to completing the survey.

Your time is greatly appreciated. If you have any questions, please feel free to contact us:

- Alyssa Guidozi (researcher): 0826260179
- Professor Clement Penny (Chairperson of the HREC): (011) 717 2301

Yours sincerely,

Alyssa Guidozi

Appendix 3: Permission to use survey tools

Permission to use survey tool Inbox x




 **Alyssa Guidozi** <0601140h@students.wits.ac.za> 21 Jun (7 days ago) ☆  

to James 

Hello,

I am a doctor in South Africa currently specialising in anaesthesia at the University of the Witwatersrand in Johannesburg. As part of my training I am doing an MMed describing how anaesthetists in the Department of Anaesthesiology at WITS use social media. Please may I have permission to use and adapt certain questions from the survey tool referred to as "multimedia appendix 1" in the article entitled "How Doctors View and Use Social Media: A National Survey"?

Kind Regards,
Alyssa Guidozi (MBBCh, DA (SA))

 **James Brown** 26 Jun (2 days ago) ☆  

to me 

Sorry for the delay in response,

Im absolutely happy to share, I just have to hunt it down from an old account. Is it OK if I get it to you over the weekend?

Thanks

...

 **Alyssa Guidozi** <0601140h@students.wits.ac.za> 26 Jun (2 days ago) ☆  

to James 

No problem at all. Thank you so much! I have been able to download it from the link provided in the article so you don't need to worry about sending it through.

Kind Regards,

...

Permission to use survey tool Inbox x



 **Alyssa Guidozi** <0601140h@students.wits.ac.za> 18 Jun (10 days ago) ☆  

to mbond 

Hello,

I am a doctor in South Africa currently specialising in anaesthesia at the University of the Witwatersrand in Johannesburg. As part of my training I am doing an MMed describing how anaesthetists in the Department of Anaesthesiology at WITS use social media. Please may I have permission to use and adapt certain questions from the survey instrument referred to as Appendix A in the article "Evaluation of Social Media Use by Emergency Medicine Residents and Faculty"?

Kind Regards,
Alyssa Guidozi (MBBCh, DA (SA))

 **Bond, Michael** <mbond@som.umaryland.edu> 18 Jun (10 days ago) ☆  

to me, mbond 

Please do. You have my permission.

--

Michael C. Bond, MD, FACEP, FAAEM
Associate Professor
Residency Program Director
Department of Emergency Medicine
University of Maryland School of Medicine

Main Office: [410-328-8025](tel:410-328-8025) Cell: [443-977-0061](tel:443-977-0061)

Fax: 410-328-8028

Email: mbond@som.umaryland.edu ← please note new email address!

Address: [110 S. Paca Street](#), Sixth Floor, Suite 200, Baltimore, Maryland 21201

Appendix 4: Permission from Head of Department of Anaesthesiology

WITS
UNIVERSITY



DEPARTMENT OF ANAESTHESIOLOGY
UNIVERSITY OF THE WITWATERSRAND,
JOHANNESBURG
Tel.(011)933-9334/5 / Fax (011)933-1843

FACULTY OF
HEALTH
SCIENCES

28 July 2018

Ms Zanele Ndlovu
Administrative Officer
Human Research Ethics (Medical)

RE : DR ALYSSA GUIDOZZI STUDENT NUMBER 0601140H

I herewith grant permission to Dr Alyssa GuidoZZi to conduct the study titled "Anaesthetists' use and ethical and legal knowledge of social media" in the University of the Witwatersrand Department of Anaesthesiology. This will entail distributing an anonymous self-administered questionnaire at the departmental meetings.

With Kind Regards

Yours sincerely

DR D LINES
PRINCIPAL SPECIALIST AND ACTING HEAD
OF DEPARTMENT OF ANAESTHESIA
UNIVERSITY OF THE WITWATERSRAND

Appendix 5: Addendum to proposal

Addendum to Proposal M180718

The following regional hospitals are being added to the list of hospitals affiliated to the Department of Anaesthesiology at the University of the Witwatersrand as these hospitals are included in an extended teaching program for interns rotating through the department.

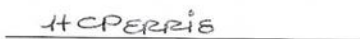
- Far East Rand Hospital
- Sebokeng Hospital
- Tambo Memorial Hospital
- Pholosong Hospital
- Thelle Mogoerane Hospital
- Leratong Hospital
- Edenvale Hospital



Assessor Group Chair of Post Graduate Committee
(Prof C Lundgren)

27-03-2019

Date



Supervisor
(Ms H Perrie)

27/03/2019

Date



Principal Investigator
(Dr A Guidozi)

28/03/19

Date

Section 5: Annexures

5.1 Ethics approval



R14/49 Dr A Guidozi et al

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL) CLEARANCE CERTIFICATE NO. M180718

NAME: Dr A Guidozi et al
(Principal Investigator)
DEPARTMENT: School of Clinical Medicine
Department of Anaesthesiology
Medical School
University


PROJECT TITLE: Anaesthetists' use and ethical and legal knowledge
of social media

DATE CONSIDERED: 27/07/2018

DECISION: Approved unconditionally

CONDITIONS:

SUPERVISOR: Ms H Perrie

APPROVED BY: 
Dr CB Penny, Chairperson, HREC (Medical)

DATE OF APPROVAL: 09/10/2018

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and ONE COPY returned to the Research Office Secretary on 3rd floor, Phillip V Tobias Building, Parktown, University of the Witwatersrand, Johannesburg.

I/We fully understand the conditions under which I am/we are authorised to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated from the research protocol as approved, I/we undertake to resubmit to the Committee. **I agree to submit a yearly progress report.** When a funder requires annual re-certification, the application date will be one year after the date of the meeting when the study was initially reviewed. In this case, the study was initially reviewed in **July** and will therefore reports and re-certification will be due early in the month of **July** each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature

Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES



09 April 2019

Dr A Guidozi
School of Clinical Medicine
Department of Anaesthesiology
University of the Witwatersrand
Parktown

Sent by email to: guidozzia@gmail.com

Dear Dr Guidozi

Re: Protocol Ref no: M180718
Protocol Title: Anaesthetists' use and ethical and legal knowledge of social media
Principal Investigator: Dr A Guidozi et al
Protocol notification: Additional list of regional hospitals and interns

This letter serves to confirm that the Chairman of the Human Research Ethics Committee (Medical) has noted the update for the abovementioned protocol, as detailed in your letter, received 28 March 2019.

The following documents were received:

- Summary letter
- Permission letter from Nicoleen Potgieter, University Deputy Registrar
- Permission letter from the acting HOD of Anaesthesia, University of the Witwatersrand
- HREC (Medical) clearance certificate, approved 09/10/2018

Thank you for keeping us informed and updated.

Yours Sincerely,

A handwritten signature in black ink, appearing to read 'Mapula Ramaila', written over a dotted line.

Miss Mapula Ramaila
Administrative Officer
Human Research Ethics Committee (Medical)



5.2 Graduate studies approval



Private Bag 3 Wits, 2050
Fax: 027117172119
Tel: 02711 7172076

Reference: Mrs Sandra Benn
E-mail: sandra.benn@wits.ac.za

13 September 2018
Person No: 0601140H
PAG

Dr AC Guidozi
Apartment 304
Seven Oaks
21 3rd Street
Killarney
2193
South Africa

Dear Dr Alyssa Guidozi

Master of Medicine in Anaesthesia: Approval of Title

We have pleasure in advising that your proposal entitled *Anaesthetists' use and ethical and legal knowledge of social media* has been approved. Please note that any amendments to this title have to be endorsed by the Faculty's higher degrees committee and formally approved.

Yours sincerely

A handwritten signature in cursive script, appearing to read "Sandra Benn".

Mrs Sandra Benn
Faculty Registrar
Faculty of Health Sciences



17 September 2018

Alyssa Guidozi
Student number 0601140H
M Med Candidate
Department of Anaesthesiology
Faculty of Health Sciences

TO WHOM IT MAY CONCERN

“Anaesthetists’ use and ethical and legal knowledge of social media”

This letter serves to confirm that the above project has received permission to be conducted on University premises, and/or involving staff and/or students of the University as research participants. In undertaking this research, you agree to abide by all University regulations for conducting research on campus and to respect participants’ rights to withdraw from participation at any time.

If you are conducting research on certain student cohorts, year groups or courses within specific Schools and within the teaching term, permission must be sought from Heads of School or individual academics.

No research can commence before ethical clearance has been obtained.
Kindly forward a copy of the clearance certificate to this office.

A handwritten signature in black ink that reads "Potgieter".

Nicoleen Potgieter
University Deputy Registrar

5.3 Turnitin report

