

Comparative assessment of attitudes among medical and dental professionals in Saudi Arabia toward e-professionalism using the SMEPROF-S scale

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ABSTRACT

Background: Social media (SM) usage is on the rise among health professionals at all levels to align with the emerging digital and SM era. e-Professionalism is described as attitudes and actions that resemble traditional professionalism paradigms but are expressed through digital media. Although there are a number of studies conducted in the past several years measuring e-professionalism of medical and dental professionals, there is no validated scale to assess the level of e-professionalism among medical and dental professionals in Saudi Arabia. Therefore, this study aimed to assess attitudes toward e-professionalism among medical and dental professionals in Saudi Arabia using the SMEPROF-S scale. **Methods:** This cross-sectional study recruited 338 medical and dental students and practitioners from 20 cities in Saudi Arabia to complete an online SMEPROF-S self-reported questionnaire measuring attitudes about e-professionalism. **Results:** Among participants, 31.66% believed that it is acceptable to communicate with patients through SM, but only 16.86% agreed with communicating via personal SM account messaging. Many participants (35.80%–50%) fear that SM use can cause problems with getting hired, people making inaccurate assumptions and perceptions, and job losses. There were 31.36% who believed that sharing patient information without consent is acceptable. The majority (63.02%–63.31%) do not believe that medical/dental professionals should be barred from using SM, and 40.53% believe that schools/organizations have no right to interfere with their online activities. Only 22.19% believed that SM use removed professional protections from the public. A few statements were statistically different by specialty and gender. **Conclusion:** There is a variability of attitudes about e-professionalism among medical and dental professionals in Saudi Arabia, with some alarming issues requiring national guidelines to ensure patient rights, privacy, and confidentiality.

Keywords: E-professionalism, dentists Saudi Arabia, medical doctors, medical student and dental students, professionalism, SMEPROF-S

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Introduction

Social media (SM) usage is on the rise among health professionals at all levels.^[1] SM is defined as a set of applications on the internet

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that allow users to create and exchange content.^[2] As SM use has become more prevalent, professional behavior has been exhibited and interpreted differently.^[3] The term “traditional professionalism” describes how an individual acts and behaves in order to uphold the social contract that exists between society and their profession.^[4] The concept of “e-professionalism” has now emerged as a new form of professionalism.^[5] to align with the emerging digital and SM era. e-Professionalism is described as attitudes and actions that resemble traditional professionalism paradigms but are expressed through digital media.^[6] However, health professionals should conduct themselves professionally online; violating rigorous ethical and legal boundaries may result in board disciplinary actions, monetary fines, and even the suspension or reduction of their licenses in some countries.^[7]

The development of professional beliefs, actions, and aspirations in medical education should take into account e-professionalism, which incorporates behaviors on SM.^[8] The prevalence and frequency of SM use among today’s students emphasizes the importance of including e-professionalism in medical professionalism definitions, teachings, and evaluations.^[3] for medical and dental professionals.

Dental students in Malaysia and Finland were found to have interacted with patients on SM^[9] as well as 11.8% of students in Finland and 73.6% of students in Malaysia had extended friend invitations to their academic members.^[9] Also, 86.4% of Malaysian students and 73.4% of students in Finland believed that in the digital age, assisting patients online is a new duty for dentists.^[9] This illustrates some of the differences in e-professionalism across countries.

Studies in Croatia and India among medical and dental students found that Facebook and Instagram were the highly utilized SM, and students were involved in unprofessional practices and content sharing, including sexually explicit content and posts about alcohol intake.^[10,11] Studies in the UK found that dental students used SM excessively, with the majority using multiple platforms.^[12,13] Despite one study revealing that a majority of participants were aware of the General Dental Council SM guidelines,^[12] students disagreed on whether posts mentioning alcohol or coworkers were considered unprofessional in various presented scenarios.^[12] However, an earlier study from 2016 showed that dental students were aware of the fact that communicating with coworkers and patients online or displaying photos of alcohol intake was regarded unprofessional.^[13] This might indicate that there is a change in perceptions of e-professionalism over time.

In Saudi Arabia, a study indicated that dental students and graduates use different SM platforms, some excessively.^[14] The study shed light on some aspects of e-professionalism, reporting that 28.75% of participants believed it is acceptable to post information/photos about a patient without the patient’s consent.^[14] However, this study did not assess e-professionalism thoroughly and did not include medical professionals. Medical and dental professions

have some key similarities that justify comparing them in the field of e-professionalism. The Hippocratic oath of respecting the best interests, confidentiality, and respect for autonomy in the healthcare practitioner–patient relationship is applied equally to the medical and dental professions.^[15]

Although numerous studies have investigated various aspects of e-professionalism and attitudes about SM among medical or dental students and workers, no validated scale has been used to assess levels of e-professionalism among medical and dental professionals in Saudi Arabia. However, recently, a new scale (SMePROF-S) was validated to measure attitudes about e-professionalism among medical and dental students.^[16] Additionally, this is the first Saudi Arabian study to investigate attitudes about e-professionalism using this scale and compare the results from medical and dental professionals.

Therefore, this study aimed to assess attitudes toward e-professionalism among medical and dental professionals in Saudi Arabia using the SMePROF-S scale.

Materials and Methods

Study design

This study’s cross-sectional design compared attitudes about e-professionalism among medical and dental professionals in Saudi Arabia using the validated SMePROF-S scale.

Setting

Data were gathered between May 23, 2022, and June 22, 2022, from medical and dental students and practitioners (professionals) in Saudi Arabia. The study data were collected using a self-administered online questionnaire in English. A link to the questionnaire was distributed via different SM platforms, including WhatsApp, Twitter, and others, to groups of medical and dental professionals in Saudi Arabia using a convenience sample. Informed consent was collected from participants before they could access the questionnaire by clicking next to represent their understanding of the terms of the study. Any personal information about participants was erased. All information from the questionnaire was kept private, and participation was voluntary.

Participants

The inclusion criteria for this study were medical and dental students, graduates with bachelor’s degrees in the field, interns, general practitioners, and professionals (residents, specialists, consultants) working in Saudi Arabia. Anyone not accepting the informed consent was excluded from participating.

Methodology

The study questionnaire comprised 31 questions divided into two sections. Section one collected sociodemographic data through seven questions about gender, age, specialty, qualification, city, region of Saudi Arabia, and nationality. Section two measured attitudes toward e-professionalism with questions adapted from

the prior study using the SMePROF-S scale.^[16] SMePROF-S comprises 24 questions divided into seven factors: ethical aspects (5 items), dangers of SM (5 items), exclusion of physicians (2 items), freedom of choice (3 items), importance of professionalism (4 items), physicians in the digital age (3 items), and negative consequences (3 items). The questions were answered on a five-point scale ranging from 1, completely disagree to 5, completely agree.^[16] However, for this study, the responses were consolidated as disagree, neutral, or agree. The prior study obtained a Cronbach's alpha of 0.72 as the reliability score for the scale used in this study.^[16]

Statistics and ethical considerations

Data were analyzed using SPSS version 25 (IBM, Inc., Armonk, NY, USA) and Microsoft Excel (Microsoft Corp., Redmond, WA, USA). The results were presented through the descriptive statistics of mean, standard deviation (SD), count, and percentage. For data analysis, Chi-square tests were used. The statistical significance level was set at a probability value (*P* value) of 0.05. The study was approved by the XXX University Institutional Review Board with the number HAPO-02-K-012-2022-06-1114.

Results

The present study collected 338 completed questionnaires from participants who had a mean age of 24 ± 4.58 years, with a range of 19–56. The majority of respondents were medical professionals or students (69.82%); the remaining 30.18% were dental professionals/students. There were more female participants (61.2%) than males (38.76%). Participants resided in 20 Saudi Arabian cities: Makkah, Jeddah, Riyadh, Jazan, Al-Hasa, Dammam, Najran, Taif, Abha, Buraidah, Al-Baha, Al-Khobar, Al-Qunfudah, Al-Madinah, Al-Quryyat, Al-Kharj, Al-Hofuf, Majmaah, and Haql. Participant demographic data are provided in Table 1.

As already noted, participants' answers to the SMePROF-S were recategorized as disagree, neutral, or agree [Table 2]. When SMePROF-S responses were compared between medical and dental participants using Chi-square, only three

SMePROF-S items (1, 2, and 20) had significant differences, with dental professionals scoring significantly higher than medical professionals. [Figure 1] Additionally, female participants had significantly higher rates of disagreement with items 13 and 21 as shown in Table 3.

Discussion

The aim of this study was to assess attitudes about e-professionalism among medical and dental professionals in Saudi Arabia. Around one-third of the participants had neutral opinions on most SMePROF-S items. One-third believed it is acceptable to communicate with patients through SM, but only 16.86% agreed that communicating with patients via SM personal messages was acceptable. Another third to half of the participants were concerned that SM use could result in problems getting hired, inaccurate perceptions of the profession among others, and job loss. Around one-third of the participants believed that sharing patient information without consent was acceptable. The majority do not believe that medical/dental professionals should be barred from using SM, and more than one-third believed that schools/organizations have no right to interfere with their online activities. Another third of the participants agreed with statements about the importance of professionalism and those related to the future of professionalism in the digital age. Only 22.19% believed that SM use leaves professionals unprotected from the public. A few differences by specialty and gender were found to be statistically significant.

Communication with patient via SM

Dental professionals in our study significantly interacted with patient via SM than medical professionals. This result is consistent with a study conducted in Croatia which found that dental students viewed SM communication with patients more favorable than medical students.^[11] There are a few possible reasons for that result. Perhaps, for example, dental professionals perceived dentistry as a business and had different expectations for SM usage.^[17] A previous study in Saudi Arabia

Table 1: Demographic Profile of Participants

Demographic variable	Category	n	%
Gender	Male	131	38.76
	Female	207	61.24
Specialty	Medicine	236	69.82
	Dentistry	102	30.18
Qualification	Student	227	67.16
	Intern/graduate (bachelor's)	91	26.92
	Specialist/consultant	20	5.92
Region	Western	251	74.26
	Central	49	14.50
	Southern	16	4.73
	Eastern	19	5.62
Nationality	Northern	3	0.89
	Saudi	324	95.86
	Non-Saudi	14	4.14

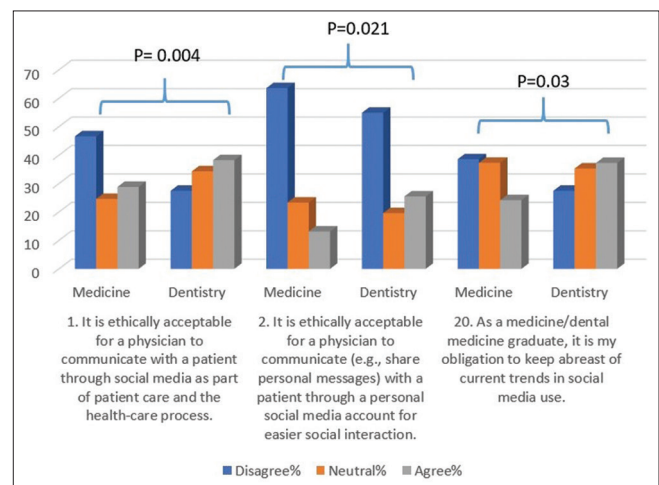


Figure 1: Significantly Different SMePROF-S Items When Compared by Specialty

Table 2: Medical and Dental Participant Answers on SMePROF-S Scale Items

SMePROF-S items	Disagree %	Neutral %	Agree %
Ethical aspects			
1. It is ethically acceptable for a physician to communicate with a patient through social media as part of his/her care for patients and the patient healthcare process.	40.83	27.51	31.66
2. It is ethically acceptable for a physician to communicate (e.g., share personal messages) with a patient through a personal social media account for easier social interaction.	60.95	22.19	16.86
3. Social media have the potential to improve communication between a physician and patients.	35.21	24.56	40.24
4. Communication with a patient through social media can be achieved without compromising physician–patient confidentiality.	38.17	34.32	27.51
5. It is ethically acceptable for a physician to visit a patient’s social media profile.	55.92	26.92	17.16
Dangers of social media			
6. It is possible that your potential employer will not hire you or invite you for an interview due to information about you found online.	37.28	26.92	35.80
7. There is a possibility that your online behavior might impact the perceptions of others in your profession.	28.99	22.19	48.82
8. People can make wrong assumptions about you based solely on the content of your posts.	26.33	23.67	50.00
9. You may lose a position you already hold (as an employee or student) due to information about you found online.	31.07	25.15	43.79
10. Sharing privileged patient information on social media without the patient’s consent is deemed to be inadmissible (not accepted).	31.36	15.68	52.96
Excluding physicians			
11. Healthcare professionals should be banned from using social networking software due to too much of a risk.	63.31	21.30	15.38
12. Healthcare professionals should be restricted from using social networking software due to too much of a risk.	63.02	21.89	15.09
Freedom of choice			
13. I should be able to do whatever I want online.	40.83	31.95	27.22
14. The School has no right to interfere in my online activities.	34.32	25.15	40.53
15. I believe that my online activities do not affect me as a professional.	43.49	27.81	28.70
Importance of professionalism			
16. I strongly agree with expectations of professional behavior and make a conscious effort to comply with them in every aspect of my life.	31.07	36.69	32.25
17. I know well what constitutes professional behavior and what is expected of me as a current/future professional.	30.77	31.66	37.57
18. High-level professional behavior should also be expected of students from the very beginning of their studies.	37.87	23.96	38.17
Physicians in the digital age			
19. Guiding patients to online information is a new responsibility of physicians in the digital age.	32.54	30.47	36.98
20. As a medicine/dental medicine graduate, it is my obligation to keep abreast with the current trends in the use of social media.	35.21	36.69	28.11
21. One of the responsibilities of a teacher is to counsel students on the appropriate use of social media.	31.66	28.40	39.94
Negative consequences			
22. Professionals cannot actually fully relax.	39.64	35.50	24.85
23. Social media have removed protection of professionals against the public.	32.84	44.97	22.19
24. It is not always possible to maintain professionalism in online activities.	37.87	31.07	31.07

Table 3: Significantly Different SMePROF-S Items When Compared by Gender

SMePROF-S items	Gender	Disagree %	Neutral %	Agree %	P
13. I should be able to do whatever I want online.	Male	32.82	41.22	25.95	0.010
	Female	45.89	26.09	28.02	
21. One of the responsibilities of a teacher is to counsel students on the appropriate use of social media.	Male	21.37	35.88	42.75	0.003
	Female	38.16	23.67	38.16	

showed that 41.72% used SM to market themselves as dentists or dental students.^[14] One interesting point is that among medical and dental professionals, despite 31.66% agreeing with communication via SM, only a small percentage agreed with similar communication conducted via personal contact. In fact,

many businesses and organizations maintain business accounts on SM applications like WhatsApp,^[18] especially in Saudi Arabia. However, the privacy of such information, especially when related to patient data, could trigger questions on proper methods of using this technology, as addressed in a recent article.^[19]

Patients' privacy rights

This is a crucial point given that our data showed 31.36% willing to share patient information without the patient's consent. This was lower than previous studies in Saudi Arabia that reported 71.25%–86% in agreement with this statement.^[14,20] Despite the unexplained differences in our results compared to previous studies, the percentages are high and considered a major breach of patients' privacy rights. Despite a general decree on guidelines for digital communication in the government sector in Saudi Arabia,^[21] comprehensive formal guidelines for the healthcare sector are lacking. We recommend this be prioritized, and previous work from the Centers for Disease Control and Prevention^[22] can be used as a benchmark for tailoring local guidance on the issues in Saudi culture.

Beneficial aspect of SM

Our results showed that a majority of medical and dental professionals disagreed with bans on their SM use. In fact, 76% of dental professionals thought SM use played an important role in enhancing their information delivery and development of their existing skills,^[23] while other studies showed how dental professionals are using SM as a learning tool in the current information technology era,^[24] and a majority of medical professionals in Saudi Arabia believed that SM use encourages increasing knowledge and skills.^[25] This extended to patients as well; 79.7% of Saudi patients believed that they could get reliable information more easily via SM.^[26]

Use of SM in business

A large majority of dentists, 99%, expect that SM use in business will increase over the next couple of years, which will affect dental advertising.^[20] In fact, SM advertising was found by dental professionals to be more efficient than traditional techniques in terms of costs and effectiveness in promoting products and services.^[27] Thus, banning the use of SM does not seem appropriate, but guidelines should be crafted that ensure patient rights of privacy and confidentiality, while still permitting medical and dental practitioners to have autonomy, freedom, and integrity.

Worries with using SM

The SMePROF-S,^[16] allowed us to identify some worries among medical and dental professionals about SM use, including problems with getting hired, losses of a job, negative perceptions of the profession, and people making inaccurate assumptions. This is supported by a previous study finding that the majority of dentists thought SM use influences patient judgments about healthcare providers.^[23] In fact, such worries are reasonable, as previous studies have shown that SM plays a significant role in employee selection.^[28] A different study gathered the cases of 22 healthcare professionals whose careers were affected by SM use, including job terminations in the United States.^[29] Such data are not available in the literature in Saudi Arabia, and more studies are needed to verify whether such worries are legitimate within Saudi Arabian culture.

More interestingly, around a quarter of participants believed that SM use makes it difficult to relax and left them unprotected against public accusations. This result is supported by an Argentinean study reporting that 37.5% of messages received by pediatricians via WhatsApp and other applications were received outside of business hours; 10% were on weekends.^[30] This might lead to increased workloads for medical and dental professionals, which could result in greater levels of the psychological burden as reported by several studies.^[31,32]

Recommendations

It is noteworthy that 20%–40% of our participants had neutral answers to the majority of SMePROF-S items. It is suggested that participants are not very confident about what SM uses, behaviors, and attitudes are appropriate and which are inappropriate. Guidelines can help resolve such matters by outlining boundaries for medical and dental professionals to follow. The differences between medical and dental professionals were significant for only a few items, which might support our step of combining responses to get a more general overview but that can also provide in-depth insight into important specialties of a healthcare work force.

The use of SMePROF-S as a validated tool for measuring attitudes about e-professionalism is the main strength of this study. Additionally, this is the first Saudi Arabian study to investigate attitudes about e-professionalism using this scale and comparing the results from medical and dental professionals. However, a few limitations exist, including the use of a self-reported questionnaire, the lack of a representative distribution of participants from different regions of Saudi Arabia, and the use of convenience sampling.

Conclusion

There is a variability in attitudes about e-professionalism among medical and dental professionals in Saudi Arabia, with some alarming attitudes and behaviors noted. This makes a call for national e-professionalism guidelines in Saudi Arabia crucial to protect patient rights to privacy and confidentiality, along with medical and dental practitioners' autonomy, freedom, and integrity.

SMePROF-S is a validated instrument for assessing attitudes toward e-professionalism, and it can be used to evaluate and compare the attitudes of medical and dentistry students and professionals.

Ethical policy and institutional review board statement

Umm Al-Qura University Institutional Review Board with number HAPO-02-K-012-2022-06-1114.

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Conflicts of interest

There are no conflicts of interest.

References

- Hazzam J, Lahrech A. Health care professionals' social media behavior and the underlying factors of social media adoption and use: Quantitative study. *J Med Internet Res* 2018;20:e12035.
- Hamm MP, Chisholm A, Shulhan J, Milne A, Scott SD, Klassen TP, *et al.* Social media use by health care professionals and trainees: A scoping review. *Acad Med* 2013;88:1376-83.
- Kaczmarczyk JM, Chuang A, Dugoff L, Abbott JF, Cullimore AJ, Dalrymple J, *et al.* E-Professionalism: A new frontier in medical education. *Teach Learn Med* 2013;25:165-70.
- Fricker J, Kiley M, Townsend G, Trevitt C. Professionalism: What is it, why should we have it and how can we achieve it? *Aust Dent J* 2011;56:92-6.
- Cain J. Online social networking issues within academia and pharmacy education. *Am J Pharm Educ* 2008;72:10.
- Cain J, Romanelli F. E-professionalism: A new paradigm for a digital age. *Curr Pharm Teach Learn* 2009;1:66-70.
- Greysen SR, Chretien KC, Kind T, Young A, Gross CP. Physician violations of online professionalism and disciplinary actions: A national survey of state medical boards. *JAMA* 2012;307:1141-2.
- Guraya SS, Guraya SY, Harkin DW, Ryan Á, Bin Mat Nor MZ, Yusoff MSB. Medical education e-professionalism (MEeP) framework: From conception to development. *Med Educ Online* 2021;26:1983926.
- Nieminen P, Uma E, Mani SA, John J, Laitala ML, Lappalainen O-P. E-Professionalism among dental students from Malaysia and Finland. *Int J Env Res Pub He* 2022;19:3234.
- Gupta S, Singh S, Dhaliwal U. Visible Facebook profiles and e-professionalism in undergraduate medical students in India. *J Educ Eval Health Prof* 2015;12:50.
- Viskić J, Jokić D, Marelić M, Poplašen LM, Relić D, Sedak K, *et al.* Social media use habits, and attitudes toward e-professionalism among medicine and dental medicine students: A quantitative cross sectional study. *Croat Med J* 2021;62:569-79.
- Dobson E, Patel P, Neville P. Perceptions of e-professionalism among dental students: A UK dental school study. *Br Dent J* 2019;226:73-8.
- Kenny P, Johnson IG. Social media use, attitudes, behaviours and perceptions of online professionalism amongst dental students. *Br Dent J* 2016;221:651-5.
- Aboalshamat K, Alkiyadi S, Alsaleh S, Reda R, Alkhalidi S, Badeeb A, *et al.* Attitudes toward social media among practicing dentists and dental students in clinical years in Saudi Arabia. *Open Dent J* 2019;13:143-9.
- Obree D, Trathen A. The special ethics of dentistry. In: Papanikitas A, Spicer J, editors. *Handbook of Primary Care Ethics*. Boca Raton: CRC Press; 2017. p. 385-92.
- Marelić M, Viskić J, Poplašen LM, Relić D, Jokić D, Rukavina TV. Development and validation of scale for measuring attitudes towards e-professionalism among medical and dental students: SMePROF-S scale. *BMC Med Educ* 2021;21:445.
- Gormley M, Collins L, Schofield S, Neville P. Exploring the impact of digital professionalism awareness training on dental undergraduate students. *Eur J Dent Educ* 2021;25:271-81.
- Yale SS, Kumar S, Sharma V. Current and potential use of WhatsApp in oral health care—A narrative review. *Int J Health Sci Res* 2018;8:278-84.
- Gebbia V, Piazza D, Valerio MR, Firenze A. WhatsApp Messenger use in oncology: A narrative review on pros and contras of a flexible and practical, non-specific communication tool. *Ecancermedicalscience* 2021;15:1334.
- Bahabri RH, Zaidan AB. The impact of social media on dental practice promotion and professionalism amongst general dental practitioners and specialists in KSA. *J Taibah Univ Med Sci* 2021;16:456-60.
- Saudi Arabia Law Collection. Guidelines of information technological communication in governmental sector in Saudi Arabia. In: Council of Ministers of Saudi Arabia Bureau of Experts at the Council of Ministers. 2019. Available from: <https://laws.boe.gov.sa/BoeLaws/Laws/LawDetails/eb1ceceb-d684-404c-afd7-aa6400f17220/1>. [Last accessed on 2022 Aug 21].
- Centers for Disease Control and Prevention. CDC; c. USA. gov. CDC social media tools, guidelines & best practices; [I screen]. Available from: <https://www.cdc.gov/socialmedia/tools/guidelines/index.html>. [Updated 2021 Aug 20, Last accessed on 2022 Aug 21].
- Al-Khalifa KS, Al-Swuailem AS, AlSheikh R, Muazen YY, Al-Khunein YA, Halawany H, *et al.* The use of social media for professional purposes among dentists in Saudi Arabia. *BMC Oral Health* 2021;21:1-8.
- Rajeh MT, Sembawa SN, Nassar AA, Al Hebshi SA, Aboalshamat KT, Badri MK. Social media as a learning tool: Dental students' perspectives. *J Dent Educ* 2021;85:513-20.
- Alanzi T, Al-Yami S. Physicians' attitude towards the use of social media for professional purposes in Saudi Arabia. *Int J Telemed Appl* 2019;2019:6323962.
- Althunayan A, Alsalhi R, Elmoazen R. Role of social media in dental health promotion and behavior change in Qassim province, Saudi Arabia. *Int J Med Health Res* 2018;4:98-103.
- Nelson KL, Shroff B, Best AM, Lindauer SJ. Orthodontic marketing through social media networks: The patient and practitioner's perspective. *Angle Orthod* 2014;85:1035-41.
- Roth PL, Bobko P, Van Iddekinge CH, Thatcher JB. Social media in employee-selection-related decisions: A research agenda for uncharted territory. *J Manag* 2016;42:269-98.
- Robards B, Graf D. "How a Facebook update can cost you your job": News coverage of employment terminations following social media disclosures, from racist cops to queer teachers. *Social Media + Society* 2022;8:1.
- Krynski L, Goldfarb G, Maglio I. Technology-mediated communication with patients: WhatsApp Messenger, e-mail, patient portals. A challenge for pediatricians in the digital era. *Arch Argent Pediatr* 2018;116:e554-9.
- Aboalshamat K, Hou XY, Strodl E. Psychological well-being status among medical and dental students in Makkah, Saudi Arabia: A cross-sectional study. *Med Teach* 2015;37:S75-81.
- Rajeh MT, Aboalshamat KT, Mahmoud MA, Badawoud AM, Muhammad A, Alzhrani IMA, *et al.* The effect of social media addiction on psychological distress, sleep quality and loneliness among health care professional in Saudi Arabia. *Med Sci* 2022;26:ms299e2379.

Abbreviation	Definition
SM	Social Media
SMePROF-S	scale for measuring attitude towards e-professionalism

Reporting guidelines: the manuscript adheres to the STROBE reporting guidelines

Fill the checklist given below:

	Item No	Recommendation	Yes/No
Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	Yes
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found. Structured abstract: Aims & Objectives, Materials & Methods, Results, Conclusion Format to be consistent	Yes
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	Yes
Objectives	3a	State specific objectives, including any prespecified hypotheses. The research objective should not be biased.	Yes
	3b	Statements to be appropriately cited	Yes
Methods – Structured methods section (with subheadings) is preferred			
Study design	4a	Present key elements of study design early in the paper (cross sectional/cohort/case-control)	Yes
	4b	Is the study design robust and well-justified?	Yes
Setting	5a	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	Yes
	5b [#]	Mention the details of the Supplier/manufacturer of the equipment/materials (E.g. Chemicals) used in the study	NA
	5c [#]	Mention the details of the drugs (manufacturer, dosage, dilution, frequency and route of administration, monitoring equipment) used in the study	NA
	5d [#]	Mention the details about the cell lines (names and where it was obtained from)	NA
Participants	6	5e [#] Mention the details of plant sample collection (Location, time period, validation of the specimen, Institution where the specimen is submitted and the voucher specimen number)	NA
		(a) Cohort study—Give the eligibility criteria (Inclusion/exclusion), and the sources and methods of selection of participants. Describe methods of follow-up	NA
		Case-control study—Give the eligibility criteria (Inclusion/exclusion), and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls	NA
Variables	7a	Cross-sectional study—Give the eligibility criteria (Inclusion/exclusion), and the sources and methods of selection of participants	YES
		(b) Cohort study—For matched studies, give matching criteria and number of exposed and unexposed	NA
		Case-control study—For matched studies, give matching criteria and the number of controls per case	NA
		Clearly define all outcomes (primary and secondary), exposures, predictors, potential confounders, and effect modifiers.	Yes
Data sources/ measurement	7b	Give diagnostic criteria, if applicable	NA
		For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	Yes
Bias	9	Describe any efforts to address potential sources of bias	Yes
Study size	10	Explain how the study size (sample size) was arrived at	Yes
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	Yes
Statistical methods (a separate heading needed)	12	(a) Describe all statistical methods, including those used to control for confounding	Yes
		(b) Describe any methods used to examine subgroups and interactions	Yes
		(c) Explain how missing data were addressed	NA
		(d) Cohort study—If applicable, explain how loss to follow-up was addressed	NA
		Case-control study—If applicable, explain how matching of cases and controls was addressed	NA
Cross-sectional study—If applicable, describe analytical methods taking account of sampling strategy	NA		
		(e) Describe any sensitivity analyses	NA

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Item No	Recommendation	Results	Yes/No
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	NA
		(b) Give reasons for non-participation at each stage	NA
		(c) Consider use of a flow diagram	NA
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	Yes
		(b) Indicate number of participants with missing data for each variable of interest	NA
		(c) Cohort study—Summarise follow-up time (eg, average and total amount)	NA
Outcome data	15*	Cohort study—Report numbers of outcome events or summary measures over time	NA
		Case-control study—Report numbers in each exposure category, or summary measures of exposure	NA
		Cross-sectional study—Report numbers of outcome events or summary measures	Yes
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	Yes
		(b) Report category boundaries when continuous variables were categorized	
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	Yes
Presentation	18a	Tables and graphs properly depicted with no repetition of the data in the text	Yes
	18b	Annotation/footnotes to be mentioned appropriately	Yes
	18c	Abbreviations to be defined in the footnotes	NA
Discussion			
Key results	19	Summarise key results with reference to study objectives	Yes
Limitations	20	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	Yes
Interpretation	21	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	Yes
Generalisability	22	Discuss the generalisability (external validity) of the study results	Yes
Citations	23a	The statements should be adequately cited	Yes
	23b	Recent citations (last 5 years) to be cited in a greater proportion	Yes
Other information			
Funding	24a	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	NA
	24b	Mention the Grant Number	NA
Ethical approval and Patient Consent	25a	Mention the IRB approval and the approval number (For animal and human subjects)	Yes
	25b	Mention if the study has been conducted in accordance with the ethical principles mentioned in the Declaration of Helsinki (2013)	Yes
	25c	Mention if the patients have consented to participate in the study. To mention if consent has been waived/exempted by IRB	Yes
Conflict of Interest	26	Mention the financial, commercial, legal, or professional relationship of the author (or the author's employer) with sponsors/organizations that could potentially influence the research.	Yes
Language	27	The language should be understandable without grammatical errors that hinders the readability	Yes

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies. [#]Give information depending on the study sample