Opportunities and challenges of using social media communication in patient care and counselling in family practice: a scoping review and ethical analysis.

CURRENT STATUS: POSTED

Daniel Kabonge Kaye
dankkaye@yahoo.com Corresponding Author

DOI:
10.21203/rs.2.14884/v1

SUBJECT AREAS
General Practice

KEYWORDS
Social media; WhatsApp; Facebook; Patient care; Health Professional education; Ethical Issues
Abstract

Background

Healthcare professionals frequently use social media in interacting with colleagues or patients. The aim of this review is to provide a conceptual analysis of ethical issues related to utilization of social media in patient care and health professional training.

Methods

Using a scoping review, electronic databases (PubMed, HINARI, Google Scholar and ERIC) were searched for publications on use of social media (especially Facebook and WhatsApp) during patient care. Challenges and opportunities faced by users (patients, educators and healthcare professionals) were analyzed.

Results

Communication between patients and healthcare professionals using WhatsApp and Facebook can improve patient care through improving patients’ understanding of and coping with their illness in family practice. It may also improve the learning environment, increase learning opportunities, complement the teaching/learning process, and enhance professional networking and performance. This presents potential risks and burdens to all related to the technology, user behaviors and nature of interactions. The ethical challenges affect data quality, security and effectiveness of the media.

Conclusion

Users of WhatsApp and Facebook for communication of educational or patient care-related matters should recognize ethical challenges related to using these media platforms in family practice. User preferences for exchange of medical care-related information or educational material should be sought and respected.

Background

Social media tools include Facebook, Instagram, WhatsApp, Twitter, LinkedIn, and video-hosting sites like YouTube [1-4]. Healthcare professionals and medical students frequently make use of social media in communicating, learning or interacting with colleagues or patients [2, 5,6]. Since these platforms provide tools where users exchange conversation, comment, deliberate, critique, contribute, share, create, modify and evaluate contents online, their potential uses are enormous [2-7]. They present a personal learning environment for students [2,3,8,9], a forum for communication
between patients and healthcare professionals [10,11], and a medium for communication between healthcare professionals [12,13]. While offering great potential to improve patient care, the use presents potential risks to patients and health workers that relate to the technology and the users, include distribution of poor-quality information [13-19]. The aim of this review is to provide a conceptual analysis of ethical issues related to utilization of social media and media applications in improving healthcare patient care.

Methods
Using a scoping review design informed by Arksey & O’Malley [20], relevant electronic databases (PubMed, HINARI, Google Scholar and ERIC (up to October, 2018) were searched for publications on use of social media digital platforms in general and WhatsApp in particular for challenges and opportunities faced by the users as a community of practice, who use then to communicate patient-related information. Search terms used included Social media, digital platforms, Facebook and WhatsApp. Both peer-reviewed and non-peer reviewed published articles, published in English were selected. During analysis, ethics-related considerations related to benefits, risks and burdens were identified, analyzed using the framework for Communities of Practice [22,23], Bandura’s Social Cognitive Theory [24,25], and Jonas’ theory of responsibility [21]. The data were grouped into themes and sub-themes following an inductive qualitative approach [20], with the ethics domains constituting the themes and the specific challenges constituting the sub-themes.

Theoretical framework: Jonas’ theory of responsibility
Jonas [21] developed a theory of ethics applicable to the technological age. Modern technology has potential to generate new threats which are inseparably linked with the technology [21]. Agents are accountable irrespective of the intentions of the action, and accountability may be at individual or collective level [21], and as an imperative of responsibility, humans as rational agents ought to minimize risks and burdens imposed by technology [21].

Results
Social media (such as WhatsApp and Facebook) presents an effective learning and teaching environment, as they can be adapted to the internet [26-28], offering invaluable opportunities for
patient education and counselling [2, 29] as well as for social, participatory and collaborative learning [31-34]. While social may create ethical issues related to loss of autonomy, inequitable access, risks such as loss of data security, or unfair distribution of risks and benefits, classifiable into four categories: Beneficence (maximizing benefit and minimizing harms), Autonomy (respect for individuals and communities of users) and justice (treating people equally and fairly. What's App and Facebook communication have potential to improve patient-physician interactions, enhance patient motivation, improve patient awareness about illness, provide accurate information, issues, facilitate the exchange of ideas, frame and reframe health-related questions, and ultimately improve patient outcomes across health systems. Table 1 shows the analysis of ethical issues during information exchange and interaction. These are related to integration of two opposed fields: medicine with values of privacy, confidentiality, interpersonal and one-to-one interactions and the field of social media, with a culture of sharing, openness, transparency and informality [35, 36]. This raises concerns over regulations of user interaction and file sharing [37,38].

Discussion

Jonas [21] made assumptions that dealings with the non-human world are ethically neutral, the entity (man) and his condition is constant in essence and cannot itself be object of “reshaping techne. Jonas’ theory is a reformulation of Kant’s categorical imperative, which Myskja [39] presents as: “Act so that the effects of your action are compatible with the permanence of genuine human life”, and therefore, agents ought to ensure that the effects of their actions do not destroy the future “genuine human life”. Therefore, to ensure “genuine human life”, agents ought to protect the future humanity’s autonomy, dignity, integrity and risk from vulnerability. Jonas theory [21] highlights three key components of “substantive responsibility”, namely, “ totality, continuity and the future”.

Individual and collective agency

The Social Cognitive Theory (SCT) posits that learnt behavior occurs in a social context, with a dynamic and reciprocal interaction between the individual and their environment to enact a given behavior [24,25]. SCT adopts an agent perspective in which individual efficacy motivates individuals
as producers of experiences and shapers of events.

**Ethical issues related to use of social media as platforms for information exchange**

The information communicated or shared on digital platforms may lead to loss of privacy as it may be visible to others [40], and may include words, photos and videos [2]. The data, however, may include patient-identifying information, such as likeness, reports discussed on ward rounds, or data shared with others in seeking opinions and consultations for patient care-related services [32,41].

Such use markedly improves the patients’ understanding of their illnesses and offers opportunity and forum to provide expert opinions and interpretations to broader patient populations [41,42].

Ethical issues may be related to justice. These digital platforms are cheaper compared to other modes of communication such as telephone, making it more possible for users to communicate [32], often with many users in a short time, such as in an emergency [32]. Users who share private or confidential thoughts risk causing harms through revealing confidential patient information, as postings have potential to portray unprofessional behaviors [43]. The potential harms include violation of patient/client privacy or posting of confidential information [43], which may lead to dismissal or censorship [44,45].

**Ethical issues related to the technology itself**

Facebook and WhatsApp have interconnections that allow individuals to connect with each other digitally and have the freedom to create their identities within this system [46]. On Facebook and WhatsApp, one can have multiple identities. This may influence a user’s behaviour, whereby a user can create a false identity and use this to send false messages. Anonymity could enable users to send anonymous messages in case of a problem that needs concealment of identity, for example, when they want to act as whistle-blowers [47-49]. Ethical issues may be related to transmission of photos and pictures that could be uploaded and shared with other users of other platforms such as Instagram, Facebook or Twitter [4], where data (photos) may be edited to obscure reality. Inability to always transmit anonymized information raises ethical concerns. There are additional challenges of data storage, data security and data safety, which further adds to risk of loss of privacy and confidentiality. When a message is sent from a device via instant messaging, the data contained is
transmitted via commercial servers on the Internet, from where it is retrieved by the message recipient [14]. The unpredictable risk from hackers or other intrusive malware creates concern over security of confidential patient information. Harms may arise out of over-use. While increasing connectedness [50], fuse may disrupt critical activities such as lectures or patient care [51, 52]. Addiction manifests as over dependency. Spread of negative information (cyber-bullying) may also occur [53]. Another ethical concern is need for local, institutional and national guidelines on which data may be shared and what media should be used, depending on sensitivity and security concerns related to the data [34]. Misuse of social media potentially damages the reputation of both individuals and the institutions they represent [54].

Conclusion
Communication between patients and health workers using WhatsApp and Facebook can enhance patient care through improving patients’ understanding of and coping with their illness. Health workers have for long used social media to benefit patients and enhance professional Networks. However, use of social media presents potential risks and burdens to all users (patients, healthcare professionals, educators and trainees) leading to ethical challenges related to the technology, user behaviors and nature of the user interactions on the social media.

Abbreviations
CoP Community of practice
ICT Information and Communications Technology
SCT Social Cognitive Theory

Declarations
Acknowledgements
The author is grateful to the Welch Library for access to the e-resources of Johns Hopkins University and to the manuscript peer reviewers for their constructive comments.

Authors’ contributions
DKK conceived the idea, conducted the background reading and literature search, reviewed the literature and drafted the manuscript.

Ethics approval and consent to participate
Not applicable

Ethics approval and consent to participate
Not applicable

Consent for publication
Not applicable

Availability of data and material
Not applicable

Competing interests
The author declares that he has no competing interests

Funding
The author did not receive specific funding for the writing of the manuscript

References
1. Kietzmann JH, Hermkens K, McCarthy IP, Silvestre BS. Social media? Get serious! Understanding the functional building blocks of social media. Bus Horizon 2011; 54:241-51.
2. Lewism K, Reicher MA. Web Applications for Patient Communication. J Am Coll Radiol 2016;13: 1603-1607.
3. Drake TM, Claireaux HA, Khatri C, Chapman SJ. WhatsApp with patient data transmitted via instant messaging? Am J Surg 2016; 211:300-1
4. Merchant RM, Elmer S, Lurie N. Integrating Social Media into Emergency-Preparedness Efforts. NEJM. 2011; 365:289–91.
5. Kaplan AM, Haenlein M. Users of the world, unite! The challenges and opportunities of Social Media. Bus Horizon. 2010;53: 59-68.
6. Kennedy G, Gray K, Tse J. 'Net Generation' medical students: technological experiences of pre-clinical and clinical students. Med Teach. 2008; 30:10-6.
7. Giordano C, Giordano C. Health professions students' use of social media. *J All Health.* 2011;40(2):78-81

8. Peck JL. Social media in nursing education: responsible integration for meaningful use. *J Nurs Educ.* 2014; 19:1-6

9. Zhu Y, Proctor R. Use of blogs, Twitter, and Facebook by UK PhD students for scholarly communication. *Observatoria* 2015; 29: 29-46

10. Grindrod K, Forgione A, Tsuyui RT, et al: Pharmacy 2.0: a scoping review of social media use in pharmacy. *Res Social Adm Pharm.* 2014; 101:256–70.

11. Ventola CL. Social Media and Health Care Professionals: Benefits, Risks, and Best Practices. *Pharmacy and Therapeutics* 2014; 39: 491-9

12. Veneroni L, Ferrari A, Acerra S, Massimino M, Clerici CA. Considerations on the use of WhatsApp in physician-patient communication and relationship. *Recenti Prog Med* 2015; 106: 331-6.

13. Von Muhlen M, Ohno-Machado L. Reviewing social media use by clinicians. *J Am Med Inform Assoc.* 2012; 19: 777–81

14. George DR, Rovniak LS, Kraschnewski JL. Dangers and opportunities for social media in medicine. *Clin Obstet Gynecol.* 2013; 56: 453-62

15. Househ M. The use of social media in healthcare: organizational, clinical, and patient perspectives. *Stud Health Technol Inform.* 2013; 183:244-8.

16. Dizon DS, Graham D, Thompson MA, et al. Practical guidance: The use of social media in oncology practice. *J Oncol Pract.* 2012; 8:114-24

17. Lambert KM, Barry P, Stokes G. Risk management and legal issues with the use of social media in the healthcare setting. *J Healthc Risk Manag.* 2012; 31:41-7.

18. Gray K, Annabell L, Kennedy G. Medical students' use of Facebook to support learning: Insights from four case studies. *Med Teach.* 2010; 32:971-6
19. Farnan JM, Snyder SL, Worster BK, et al: Online medical professionalism: patient and public relationships: policy statement from the American College of Physicians and the Federation of State Medical Boards. Ann Intern Med. 2013;158: 620-7.

20. Arksey H, O’Malley L. Scoping studies: towards a methodological framework. Int J Soc Res Methodol 2005;8:19-32.

21. Jonas H. 1984. The imperative of responsibility: In search for an ethics for the technological age. Chicago: University of Chicago Press.

22. Wenger, 1998. Communities of practice. Learning, meaning, and identity, Cambridge, UK: Cambridge University Press.

23. Wenger E, McDermott R, Snyder 2002. Cultivating communities of practice. A guide to managing knowledge, Cambridge, MA: Harvard Business School Press

24. Bandura A. Social cognitive theory: an agentic perspective. Anu Rev Psychol. 2001; 52:1-26

25. Bandura A. Exercise of human agency through collective efficacy. American Sociology Society 2000; 9: 75-8.

26. Serrato MG: ‘Watch-Think-Write’ and Other Proven Strategies for Using Video in the Classroom. https://ww2.kqed.org/education/2016/08/23/watch-think-write-and-other-proven-strategies-for-using-video-in-the-classroom/ Accessed Oct 12, 208

27. George DR, Dreibelbis TD, Aumiller B. How we used two social media tools to enhance aspects of active learning during lectures. Med Teach. 2013; 35:985-8.

28. George DR. "Friending Facebook?" A minicourse on the use of social media by health professionals. J Con Educ Health Profess. 2011; 31: 215-19

29. Lagu T, Kaufman EJ, Asch DA, Armstrong K. Content of weblogs written by health professionals. J Gen Intern Med. 2008; 23: 1642-6

30. Fogelson NS, Rubin ZA, Ault KA. Beyond likes and tweets: an in-depth look at the
physician social media landscape. *Clin Obstet Gynecol.* 2013;56:495–508

31. Grajales FJ, Sheps S, Ho K, et al. Social media: a review and tutorial of applications in medicine and health care. *J Med Internet Res.* 2014;16(2):e13.

32. Johnston MJ, King D, Arora S, et al. Smartphones let surgeons know WhatsApp: an analysis of communication in emergency surgical teams. *Am J Surg* 2015; 209:45–51.

33. Blumenfield O, Brand R. Real time medical learning using the WhatsApp cellular network: a cross-sectional study following the experience of a division’s medical officers in the Israel Defense Forces *Disaster and Military Medicine. The Journal of Prehospital, Trauma and Emergency Care* 2016; 2:12

34. Cohen DA, Levy M, Cohen Castel O, Karkabi K. The influence of a professional physician network on clinical decision making. *Patient Educ Couns.* 2013; 93:496-503.

35. Gunawardena CN, Lowe CA, Anderson T: Analysis of a global online debate and the development of an interaction analysis model for examining social construction of knowledge in computer conferencing. *Educational Computing Research* 1997; 17: 397–430

36. Cheston CC, Flickinger TE, Chisolm MS. Social Media Use in Medical Education: A Systematic Review. *Acad Med.* 2013; 88:893-901

37. Thompson LA, Dawson K, Ferdig R, Black EW, Boyer J, Coutts J, et al. The intersection of online social networking with medical professionalism. *J Gen Intern Med.* 2008; 23:954–7.

38. Cartledge P, Miller M, Phillips B. The use of social-networking sites in medical education. *Med Teach.* 2013;35 :847-57.

39. Myskja BK. The categorical imperative and the ethics of trust. *Ethics and Information Technology* 2008; 10: 213-20

40. Brewster CT, King IC. WhatsApp: Improvement tool for surgical team communication.
41. Hawkins CM, DeLao JA, Hung C. Social Media and the Patient Experience. *J Am Coll Radiol* 2016; 13:1615-21.

42. Broughton DE, Schelble A, Cipolla K, Cho M, Franasiak J, Omurtag KR. Social media in the REI clinic: what do patients want? *J Assist Reprod Genet.* 2018: 35: 1259-63

43. Thompson LA, Black E, Duff WP, Black NP, Saliba H, Dawson K. Protected health information on social networking sites: Ethical and legal implications. *J Med Internet Res.* 2011; 13: e8.

44. Chretien KC, Kind T. Social media and clinical care: ethical, professional, and social implications. 2013;127: 1413-21

45. Papadakis MA, Teherani A, Banach MA, et al. Disciplinary action by medical boards and prior behavior in medical school. *N Engl J Med.* 2005;353: 2673-82

46. Ellison NB, Steinfield,C, Lampe C. The Benefits of Facebook-friends: Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication* 2007; 12: 1143-68

47. Using google drives backups. https://faq.whatsapp.com/en/android/28000019/?category=5245251 Accessed October 12, 2018

48. BBC News. Snapchat Hack Affects 4.6 Million Users - BBC News. Available at: http://www.bbc.co.uk/news/technology-25572661. Accessed October 12, 2018

49. Fairchild C: What WhatsApp Users Need to Know about Google Drive Backups https://www.nextgov.com/analytics-data/2018/08/what-whatsapp-users-need-know-about-google-drive-backups/150931/. Accessed October 12, 2018

50. Balakrishnan V, Raj RG. Exploring the relationship between urbanized Malaysian youth and their mobile phones: A quantitative approach. *Telematics and Informatics*
51. Walsh S, White K, Young R. Needing to connect: The effect of self and others on young people’s involvement with their mobile phones. *Australian Journal of Psychology* 2010; 62, 194-203.

52. North D, Johnston K, Ophoff J: The use of mobile phones by South African university students. *Issues in Informing Science and Information Technology* 2014; 11: 115-38.

53. Runions KC, Bak M. Online moral disengagement, cyberbullying, and cyber-aggression. *Cyberpsychol Behav Soc Netw.* 2015;18 :400-5.

54. Shore R, Halsey J, Shah K, et al. Report of the AMA Council on Ethical and Judicial Affairs: Professionalism in the Use of Social Media. *J Clin Ethics.* 2011; 22:165-72.

**Table**

Table 1: Ethical issues related to use of social media for educational and patient care-related purposes.
| Characteristic related to use of social media | Ethical challenges | Possible principle affected or violated |
|-----------------------------------------------|-------------------|---------------------------------------|
| Widely used media Media acceptable to some users Provider performance and student learning enhanced | Not all potential users know how to use Issue of access to smart phones, internet or data Not all users know how to effectively communicate on the media | Autonomy Beneficence Distributive and procedural justice |
| Data security | Data security in case of lost or damaged hardware or software Data safety and Confidentiality Privacy Data stored may be lost or modified Data theft or damage by hackers | Beneficence if data is lost (Non-maleficence if data is lost or misused) Autonomy in being in control of one’s c |
| Use of shortcuts in texts and emoticons. Use of slang Use of acronyms, abbreviations and wrong cases | Faults in data transmission or incorrect data transmitted Data may be misunderstood or misinterpreted by recipients Data privacy and confidentiality for intended recipients | Beneficence to in Non-maleficence Distributive and procedural justice Autonomy |
| Multiple hidden user profiles | Loss of trust in face-less communications Loss of personal interaction Loss of proximity Loss of co-presence Ability to communicate anonymously as whistle blowers | Beneficence Non-maleficence Distributive and procedural justice Autonomy and informed consent |
| Regulations or guidelines on using the social media | Abuse such as cyberbullying Loss of confidentiality Loss of privacy Distraction of users with useless information; Issue of quality Inability to regulate user behaviors | Beneficence Non-maleficence Autonomy and informed consent Distributive justice |
| Software or hardware or Internet connectivity | Disparity in access Inequitable resource allocation Need for updates | Beneficence Procedural and Distributive Justice (from resource allocation, cost and access) |
| Stakeholders preferences and needs | Stakeholders preferences not sought or respected regarding whether, how, when and which data to transmit | Autonomy and informed consent Distributive and procedural justice Beneficence |
| Effectiveness as educational tools | Effective as educational tools for individual or group feedback Media may be suitable for learning styles of some students Offer collaborative and social learning Anonymous data sources Typed errors and unknown slangs or shortcuts and emoticons Users identifiable if user name is known Messages displayed in the order in which they are posted Loss of trust, co-presence and proximity Impersonal communication | Beneficence Distributive and procedural justice Autonomy and informed consent for so |
| User ser behaviors | Dependence and Addiction | Non-maleficence |
