

1 **Title:** Sharing Health Information on Social Media: What is the Limit for Medical Students?

2

3 **Author names:** Enrico Manfredini

4 **Degrees:** Medical Student

5 **Affiliations:** Faculdade de Ciências Médicas da Santa Casa de São Paulo - FCMSCSP (São Paulo, SP, Brazil)

6

7 **About the author:** Enrico Manfredini is currently a fourth-year medical student at Faculdade de Ciências
8 Médicas da Santa Casa de São Paulo - FCMSCSP (São Paulo, SP, Brazil) of a six-year program.

9

10 **Acknowledgment:** N/A.

11 **Financing:** There was no funding for this manuscript.

12 **Conflict of interest statement by authors:** The author has no potential conflicts of interest to declare.

13 **Compliance with ethical standards:** No ethical standards were breached in writing this manuscript.

14

15 **Authors Contribution Statement:** Conceptualization: EM. Resources: EM. Writing – Original Draft: EM.
16 Writing – Review & Editing: EM. Supervision: EM. Project Administration: EM.

17 **Manuscript word count:** 995.

18 **Number of Figures and Tables:** None.

19

20 **Personal, Professional, and Institutional Social Network accounts.**

- 21 • **LinkedIn:** <https://www.linkedin.com/in/enricomanfredini>
- 22 • **Instagram:** <https://www.instagram.com/enrico.manfredini>

23

24

25 **Discussion Points:**

- 26 1. How do medical students use digital media to disseminate health information to patients and the general
27 public?
- 28 2. What are the best practices for medical students to share health information on social media?
- 29 3. Social networks should not be disregarded as a source of medical information, but the information
30 shared must be regulated to ensure patient safety and protection.
- 31 4. Social media best practices should be more strongly implemented and should be a mandatory subject
32 of medical school curricula.

33

34 **Publisher's Disclosure:** *This is a PDF file of an unedited manuscript that has been accepted for publication.*
35 *As a service to our readers and authors we are providing this early version of the manuscript. The manuscript*
36 *will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable*
37 *form. Please note that during the production process errors may be discovered which could affect the content,*
38 *and all legal disclaimers that apply to the journal pertain.*

39

1 **THE LETTER.**

2
3 Social media plays several important roles in medicine.¹ Doctors use Instagram®, Twitter®, TikTok®, and more
4 to share successful stories and new treatments, and hospitals use social media to provide health information to
5 patients. Medical students are important and influential participants in the digital world because they are young,
6 they dominate social network resources, and they have high engagement power. How do medical students use
7 their digital media abilities and knowledge to disseminate health information to patients and the general public,
8 and what are the limits and best practices for them to share health information on these platforms?

9
10 There is an abundance of videos shared on social media of medical students at home or in a hospital setting.
11 Some of these videos depict medical students presenting the most probable diagnosis for a given symptom,
12 trying to diagnose skin conditions that others have shared with them, and reacting to people treating their
13 conditions at home with non-evidence-based methods. In other videos, students list possible causes for
14 relatively straightforward conditions such as constipation, acne, and nail abnormalities, and teach users how to
15 treat them. These are some of the innumerable examples available from medical students and physicians.²⁻⁵

16
17 A potential issue related to this content is that medical students may be providing inaccurate or misguiding
18 information without a medical license or the legal right to practice medicine. Importantly, many of these videos
19 do not include a recommendation to consult a physician, a warning against self-medication, or recommendations
20 for additional research about a condition through official sources like health institutions and government
21 websites.²⁻⁵ Moreover, these disclosures and other recommendations are required to meet basic ethical and
22 legal standards that are part of several social media guidelines for healthcare professionals,^{1,6-7} including
23 themes such as maintaining patient confidentiality, giving medical advice via a proper doctor–patient
24 relationship, and more. The importance of these recommendations for sharing health information on social
25 media have become particularly evident during the COVID-19 pandemic because some social media platforms
26 detect posts about COVID-19 and recommend that users who view these posts visit healthcare authorities'
27 websites for accurate information.⁸ Failure to recommend official resources to users of social media may lead
28 people to a delayed understanding of the condition and seeking medical assistance. For certain diagnoses,
29 such delays can make a significant difference in prognosis.

30
31 Many social media posts and videos are intended to be entertaining, particularly in the new application TikTok®.²
32 Fun soundtracks and figures broaden the audience and present information in a straightforward manner;
33 however, the light tone may lead patients to perceive symptoms and diseases as less serious than they are.
34 For instance, constipation could be due to a relatively simple etiology such as a low-fiber diet, but it could also
35 be the result of a severe and complex condition such as a gastrointestinal neoplasia.⁹ Similarly, nail
36 abnormalities could be caused by a micronutrient deficiency, but they could also be caused by chronic renal
37 disease.¹⁰ Such distinctions are most appropriately evaluated by professionals in a healthcare service
38 environment rather than by patients or medical students on social media. Establishing a diagnostic hypothesis
39 and resulting treatment is an intricate process best made in person by a professional. Therefore, social media
40 users looking for information about a condition should be instructed to seek medical assistance rather than to
41 self-medicate.

1 A factor that contributes to a deficiency in health information from social media is the brief nature of social media,
2 including posts, one-minute videos, and “stories.” Longer options exist but are less attractive to users because
3 of the large quantity of information to scroll through. Similarly, social media users generally do not watch videos
4 or read posts multiple times to make sure they have absorbed all the content. The brief attention span of social
5 media users shapes the way in which content is structured and determines what information gets shared,
6 including medical information. Notably, deciding what information to share is a problem that is not exclusive to
7 social networks. For example, researchers who write an article about a study must carefully select what
8 information to include, to respect the word count provided by the journal and preserve the content, which is not
9 an easy task. The same challenge, but often to a greater degree, is encountered when creating online content
10 because some ideas and cases cannot be expressed or discussed accurately in a brief time, hence some
11 information always gets lost in translation to a public audience.
12

13 Medical students should carefully consider what information to share on social media and how to share it.
14 Rigorous criteria must be applied, and students must take responsibility for the content provided as any
15 healthcare professional would. One of the many benefits of social media is the ability to share information about
16 a disease or condition with the general population in an accessible way. Social media can be used to raise
17 awareness, combat misinformation, provide patient support, answer common questions, engage with patients,
18 and more. However, no treatment, conduct, or medication should be recommended collectively or individually
19 by medical students on social media other than instruction to consult a physician and not to self-medicate. In
20 addition to this limit, it is essential for medical students to provide reliable sources of information for public
21 reference. Students can provide internet sources in which the information has been filtered and simplified by
22 experts in the field, such as WebMD®, Mayo Clinic®, or the Health Information portal of the National Institutes of
23 Health (NIH).
24

25 In conclusion, social networks are a significant source of medical information and will continue to be relevant in
26 the future. They should not be disregarded as a source of medical information; however, the information shared
27 and the ways in which information is shared must be regulated to ensure patient safety and protection. This
28 regulation already exists to some extent, given that there are several guidelines on using social media for
29 doctors and students available; however, these guidelines are not strongly implemented across institutions and
30 most schools do not include them as mandatory in their curricula, leaving the door open for potential misuse
31 and spread of misinformation. For example, schools could offer classes or information about how their students
32 should conduct themselves if they are creating online content.
33

1 REFERENCES.

- 2 1. Ventola CL. Social media and health care professionals: benefits, risks, and best practices. P T. 2014
3 Jul;39(7):491-520.
- 4 2. Bruno CM. A Content Analysis of How Healthcare Workers Use TikTok. Elon Journal of Undergraduate
5 Research in Communications. 2020 Fall;11(2):5-16.
- 6 3. CNN. Nurses and doctors are flocking to TikTok to crack jokes and lip sync. But are they eroding
7 patients' trust? Available from: <https://edition.cnn.com/2020/01/18/us/tiktok-doctors-nurses-trnd/index.html>. Last updated: January 18, 2020; cited March 11, 2021.
- 9 4. Harrison B, Gill J, Jalali A. Social Media Etiquette for the Modern Medical Student: A Narrative Review.
10 Int J Med Students. 2014 Dec 24;2(2):64-7.
- 11 5. MIT Technology Review. Doctors are now social-media influencers. They aren't all ready for it. Available
12 from: <https://www.technologyreview.com/2020/04/26/1000602/covid-coronavirus-doctors-tiktok-youtube-misinformation-pandemic/>. Last updated: April 26, 2020; cited March 11, 2021.
- 14 6. American Medical Student Association. Social Media Guidelines for Medical Students and Physicians.
15 Available from: <https://www.amsa.org/2016/09/15/social-media-guidelines-medical-students-physicians>. Last updated: n.d.; cited March 11, 2021.
- 17 7. Riley B. Social Media Highway Codes. 1st ed. London: Royal College of General Practitioners; 2013.
- 18 8. Instagram. Keeping People Informed, Safe, and Supported on Instagram. Available from:
19 <https://about.instagram.com/blog/announcements/coronavirus-keeping-people-safe-informed-and-supported-on-instagram>. Last updated: March 24, 2020; cited March 2, 2021.
- 20 9. Müller-Lissner S. The pathophysiology, diagnosis, and treatment of constipation. Dtsch Arztebl Int. 2009
21 June 19;106(25):424-32.
- 23 10. Singal A, Arora R. Nail as a window of systemic diseases. Indian Dermatol Online J. 2015 March-
24 April;6(2):67-74.