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The cancer Infodemic: The pervasive challenge of misinformation

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Health content on the internet, especially social media, often includes unreliable information. Misinformation about cancer has received considerable attention in relation to this phenomenon. Less is known about how misinformation impacts cancer care and patient survival. Concerns have been raised with respect to the ability of unsupervised cancer counseling to mislead patients, create false hopes relative to treatment, affect clinical outcomes, and lower trust in physicians. Consequently, the level of e-health literacy required to recognize reliable health information, reject misinformation, and understand authentic cancer-related content becomes a critical question. This letter addresses cancer misinformation and its consequences. Therefore, understanding it in today's context is extremely important. We offer this as a call to action for all healthcare practitioners to take a more active role in ongoing efforts to counter the spread of misinformation in oncology.

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Dear Editor-in-Chief

Since 2020, the number of individuals using the internet has increased significantly; by April 2023, 4.8 billion people were using social media platforms, representing 59.9% of the world's population. Over the past decade, the internet's role in creating, distributing, and using health information has fundamentally changed. While this open environment has improved access to information, it has also accelerated the circulation of health misinformation, defined as scientifically unverified, potentially inaccurate, or misleading content [1]. Misinformation is defined as "incorrect information that is disseminated, regardless of whether there is an intention to mislead." The proliferation of health misinformation, amplified by digital platforms, has become a significant concern for both the public and the scientific community. During the COVID-19 pandemic, the term "infodemic" was used repeatedly in the healthcare sector to highlight the challenges of managing large volumes of information during health emergencies. So, in the health field, especially in cancer, this can be a concern [2]. The World Health

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Organization (WHO) defines infodemics as large quantities of misleading and/or inaccurate information during epidemics and crises that confuse people, lead to harmful actions, and erode trust in health authorities. Regarding the cancer issue, fear, urgency, and hope serve as triggers for false narratives. The COVID-19 situation has shown how dangerous misinformation spread through official channels can be, which should not be overlooked in cancer care [3].

Cancer patients need all kinds of information and guidance to deal with their new predicament [4]. With these interpretations, cancer information, which is considered one of the most common diseases worldwide, is often sought online. Internet health information seeking among cancer survivors rose from 53.5% to 69.2% by 2017. These individuals frequently face a range of challenges, including psychosocial, cognitive, and physiological difficulties, in addition to concerns about disease recurrence and secondary cancers. Consequently, cancer patients often have more complex health information needs than healthy individuals, and inadequate or inaccurate information can lead to dissatisfaction or negative health outcomes. Patients may turn to alternative sources if healthcare providers do not furnish sufficient details. Moreover, even individuals satisfied with their care or the information provided may still seek supplementary knowledge elsewhere. The COVID-19 pandemic underscored the importance of digital health literacy for navigating online cancer-related information. However, empirical data regarding the digital trends and online information-seeking behaviors of individuals and families impacted by cancer remain limited [5].

Notably, more than 80% of cancer patients report using social media to connect with peers facing similar diagnoses, and over 77% identify the internet as their primary source of medical information. The rapid dissemination of accurate health information is paralleled by the swift propagation of misinformation [6].

The use and exploitation of information available on the Internet, especially when scientifically inaccurate, by cancer patients and their families can have clinical consequences without them realizing that they are harming themselves. Johnson et al. analyzed 50 widely read social media articles about the four most common cancer types (breast, prostate, colorectal, and lung) and their relevance to social media, including Facebook, Reddit, Twitter, and Pinterest, between January 2018 and December 2019. Almost a third included misinformation, while 76.9% contained harmful information that can contribute to negative impacts on various aspects, such as delays in treatment and/or negative interactions with standard therapy [7]. The important point of this letter is that this can be attributed to the psychological burden of this issue, which leads to anxiety and overthinking, as well as the physical burden. From the statistics on people's increasing use of the Internet and cyberspace, it can be argued that belief in the experiences of cancer patients on social platforms can affect cancer patients or their families, and that this belief can increase or decrease sensitivity to the truth or falsehood of information; it can be said that it can affect at least the psychological and physical dimensions. In a study conducted by Hind et al. in 2026, most participants claimed that misinformation about cancer often leads to delays in medical care and the abandonment of evidence-based treatments for unproven alternatives, which leads to rapid disease progression [4]. On the other hand, one must also understand the relationship between the patient and the doctor. In a 2017 review of 18 empirical studies examining patients' online health information seeking and its implications for the patient–physician relationship, Tan et al. found that a large proportion of patients did not feel that their online health information-seeking activities hurt the patient–physician relationship. Finally, it can be argued that the recent proliferation of health information on the Internet has led to a shift in the traditional balance of information, in which patients are increasingly equipped with health information relevant to their conditions, breaking the previous monopoly on health information among health professionals. However, the findings suggest that patients' positive attitudes toward physicians have not changed unless physicians restrict sharing their online information during consultations [8].

Less is known about how misinformation affects cancer care and patient survival. The concern is that unsupervised cancer counseling can harm cancer patients by creating false hope for treatment (sometimes for profit) or by reducing trust in

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reputable science.

A survey of 276 prostate cancer patients who primarily received their information from the Internet, compared with their radiation oncologist, reported significantly more regret about the type of treatment they received. Exposure to content with exaggerated or unbalanced information may create unrealistic expectations, leading to greater regret about treatment[9].

Strong evidence confirms that the Internet has become an established, widely used tool for accessing health-related information. Concerns persist regarding the quality, accuracy, and reliability of online content. Various initiatives have therefore been initiated to ensure trustworthy digital health information and to stem the tide of misinformation. Examples include the Health on the Net Foundation (HONcode), established in 1995, which certifies websites according to principles of transparency, credibility, and evidence-based content; also, structured quality assessment tools like DISCERN, JAMA Criteria for Quality, and, more recently, PRHISM: Principles for Health Information in Social Media [10].

Recently, some social media platforms such as Facebook and Twitter have begun efforts to control fake news by adjusting their algorithms to improve content quality and curb bots that spread false information. It is possible to reduce the effect of automated dissemination of information via bots on social media platforms.

In conclusion, it can be stated that the fast development of new communication tools and social networks will serve as an instrument for social communication and obtaining information in the health area. Still, at the same time, it will entail new challenges and dilemmas. Being diagnosed with cancer is a singularly challenging experience for affected individuals and their relatives. Health care providers must ensure the appropriateness, reliability, timeliness, and accessibility of the information, care, and assistance they provide so cancer patients and their families can make informed treatment decisions. Furthermore, analyzing health information available on the Internet has become necessary, and access to advanced technology that allows individuals to obtain and interpret information is also crucial. Combating misinformation requires a multifaceted approach. Health professionals, research agencies, government institutions, and technology companies must all be part of the solution and promote the goal of making individuals more discerning and effective consumers of information. For this to happen, healthcare providers should play an active role on social media as first responders to misinformation. Strategies must be devised to improve public health literacy; one possible strategy is to develop specific courses on the subject to be incorporated into curricula at both the K-12 and university levels. Another is that those in charge should strengthen the preparedness, prevention, and resilience aspects of health systems in the context of an infodemic. Therefore, the examination of the current state of digital health literacy research, the enhancement of healthcare specialists' skills, and the growth of community health literacy can provide substantial opportunities for combating the Infodemic issue in cancer and engaging the primary stakeholders, such as patients and the public, in accordance with the most recent research in this field.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

ETHICS APPROVAL

Not applicable.

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