Health misinformation and its impact on mental health: a focus on brazilian healthcare professionals and high-stress environments

Desinformação em saúde e seu impacto na saúde mental: foco nos profissionais de saúde brasileiros e em ambientes de alto estresse

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Abstract

Objective – To investigate the impact of health misinformation through artificial intelligence on the mental health of healthcare professionals during the COVID-19 pandemic. **Methods** – To this, a systematic literature review will be conducted to examine the impact of health misinformation through artificial intelligence on the mental health of healthcare professionals during the COVID-19 pandemic. **Results** – So, the impact of health misinformation through artificial intelligence on the mental health of healthcare professionals during the COVID-19 pandemic is a critical issue that requires attention. It is essential to prioritize the mental health and well-being of healthcare professionals, particularly during times of crisis such as the COVID-19 pandemic. **Conclusion** – Based on this literature review, it was found that, in more than one Brazilian state, health professionals who were on the front line to combat the pandemic had stressful situations linked to excessive work and the uncertainties brought about by COVID-19.

Descriptors: Healthcare profesionals; COVID 19 pandemic; Mental health, Unified health system

Resumo

Objetivo – Investigar o impacto da desinformação em saúde por meio da inteligência artificial na saúde mental dos profissionais de saúde durante a pandemia de COVID-19. **Métodos** – Será realizada uma revisão sistemática da literatura para examinar o impacto da desinformação através da inteligência artificial nos profissionais de saúde mental durante a pandemia. **Resultados** – O impacto da desinformação sobre saúde por meio da inteligência artificial na saúde mental dos profissionais de saúde durante a pandemia é uma questão crítica que requer atenção. Precisamos priorizar a saúde mental e o bem-estar dos profissionais de saúde, principalmente em tempos de crise como a pandemia de COVID-19. **Conclusão** – A partir dessa revisão de literatura, verificou-se que, em mais de um estado brasileiro, profissionais de saúde que estavam na linha de frente para combate à pandemia tiveram situações de estresse ligadas ao trabalho excessivo e às incertezas trazidas pelo COVID-19.

Descritores: Pessoal da saúde; Pandemia de COVID 19; Saúde mental; Sistema único de saúde

Introduction

Health misinformation can be found everywhere, from social media to news outlets.[3, 4] This type of false or misleading information can have serious consequences on an individual's mental health, as it can lead to confusion, anxiety, and fear.

Although health misinformation affects everyone, regardless of their profession or socioeconomic status, healthcare professionals may be particularly vulnerable to it due to their exposure to medical information and their need to stay informed about the latest developments in their field.[5] Misinformation can erode their trust in medical information and undermine their confidence in their own expertise, leading to stress, burnout, and other mental health issues.[1]

Similarly, people who work in high-stress environments, such as emergency services, the military, and frontline workers during the COVID-19 pandemic, may also be more susceptible to mental health problems related to health misinformation. The constant barrage of misinformation can lead to feelings of helplessness, frustration, and confusion, which can be detrimental to mental health.[2]

It's essential to take steps to avoid exposure to health misinformation and seek out reliable, evidence-based information when making decisions about health. This includes checking the source of information, verifying the accuracy of claims, and consulting with a healthcare professional whenever possible. Additionally, it's important to prioritize self-care and seek support when needed, whether through therapy, counseling, or other resources.

Health misinformation can have a profound impact on mental health, particularly for healthcare professionals and those in high-stress environments. It's crucial to take proactive measures to combat misinformation and prioritize mental health in the process.

A systematic literature review will be conducted to examine the impact of health misinformation through artificial intelligence on the mental health of healthcare professionals during the COVID-19 pandemic. The search strategy will include a comprehensive search of electronic databases such as PubMed, Scopus, and

Web of Science, as well as a manual search of relevant journals and reference lists. The search terms will include combinations of keywords such as "health misinformation", "artificial intelligence", "COVID-19", "mental health", and "healthcare professionals". The inclusion criteria for the articles will be peer-reviewed articles published between January 2020 and the present, written in English, and focused on the impact of health misinformation through artificial intelligence on the mental health of healthcare professionals during the COVID-19 pandemic. The exclusion criteria will be articles that are not peer-reviewed or not written in English. Two independent reviewers will screen the titles and abstracts for eligibility and full-text articles will be reviewed for inclusion. The data will be extracted using a standardized form and analyzed using a thematic analysis approach. The quality of the studies will be assessed using the Cochrane Risk of Bias tool and the Joanna Briggs Institute critical appraisal tool.

Methods

Access to mental health resources and utilization of services for healthcare professionals during COVID-19 and implications for ongoing support

Some mental health resources and services available for healthcare professionals during COVID-19 for continuous support include access to mental health services, support hotlines, mental health apps, wellness programs and team support.[6]

Many hospitals and healthcare systems have mental health support programs for healthcare professionals. These programs may include access to psychologists, therapists, or other mental health professionals who can provide counseling and therapy.[5]

Various organizations and institutions offer support hotlines for healthcare professionals. These hotlines may offer phone counseling or referrals to mental health services.[7]

There are several mental health apps that can help healthcare professionals manage stress and anxiety. These apps may provide meditation exercises, tips for improving sleep, and other tools for managing stress.8

Many healthcare institutions have wellness programs for their employees, which may include activities such as yoga classes, meditation, or other relaxation activities.[9]

It is important for healthcare professionals to have support from their team and leadership. This may include the creation of support groups, training sessions for stress management, or the establishment of a peer support system.[10]

During the COVID-19 pandemic, there was a significant impact on the mental health of Brazilian healthcare professionals. Work overload, lack of personal protective equipment (PPE), exposure to the risk of contagion, and the increase in severe cases and deaths were some of the factors that contributed to stress and anxiety among these workers.[14]

In Brazil, the Ministry of Health and professional councils such as the Federal Council of Medicine and the Federal Council of Nursing offered psychological and emotional support for healthcare professionals. Additionally, several non-governmental organizations (NGOs), unions, and universities also developed mental health support programs for these professionals.[11-13]

However, many healthcare professionals reported that the support offered was insufficient or inaccessible, especially for those working in remote areas or with limited resources.[15, 16] Additionally, the lack of recognition and appreciation from government authorities and society as a whole was also a source of stress for these workers.

Support for the mental health of Brazilian healthcare professionals during the COVID-19 pandemic was a challenge, and many workers reported difficulties in accessing available resources.

Results

How artificial intelligence helps in the health development of health professional

There are several ways in which artificial intelligence (AI) can help in the development of healthcare for healthcare professional, like a mental health support, medical education, diagnostics and treatment or resource allocation.[17- 20]

AI-powered chatbots and virtual assistants can provide mental health support to healthcare professionals. These tools can offer personalized support, including self-care tips and resources for seeking professional help.[17]

AI can too assist in medical education by providing personalized learning experiences based on individual needs and preferences. AI-powered simulations can also help healthcare professionals develop critical skills without putting patients at risk.[18]

In the same way, AI-powered tools can help healthcare professionals with diagnostics and treatment decisions.[20] For example, AI can analyze medical images and help doctors identify potential health risks or recommend appropriate treatment options.

And, AI can help healthcare professionals optimize resource allocation by predicting demand for healthcare services, identifying inefficiencies in healthcare delivery, and streamlining patient flow. [19]

Overall, AI has the potential to enhance healthcare delivery and support for healthcare professionals. However, it is important to ensure that these tools are implemented ethically and with consideration for patient privacy and data security.

In a study conducted by the Federal University of Rio Grande do Sul, which included 1054 healthcare professionals, of whom 34.5% were physicians, 19.1% were nursing technicians, 14.2% were nurses, and

11.9% were psychologists, more than half of the total sample had scores ≥50 in the personal burnout domain and scores suggestive of clinically significant depression. Moreover, the highest indices were found among nursing technicians (68.2% with burnout pessoal – PB ≥50 and 68.7% with PHQ9 ≥9, a questionnaire used to assess the presence and severity of depression symptoms in patients) and frontline COVID-19 healthcare workers (61.3% with PB ≥50 and 58% with PHQ-9 ≥9). Nursing technicians had higher PB (58.4 ± 20.9) and work-related burnout - WB (WB = 51.0 ± 21.1) scores than physicians (PB= 48.2 ± 19.9 and WB= 44.2 ± 19.1) and psychologists (PB= 44.2 ± 17.4 and WB= 41.2 ± 16.7) with p <0.001.22

It is worth mentioning that:

> *"[...] the weekly workload was not different among physicians, nurses, and nursing technicians, but it was lower among psychologists and other healthcare professionals. Therefore, what we emphasize relates not only to the workload but also to the way it is distributed among different professions. In addition, the closer proximity of nursing technicians to patients may make them more mobilized with emotional and physical issues that emerge from this professional contact. Another factor that may be related to a higher incidence of burnout and depression in nursing technicians is the higher prevalence of childhood traumas, so that current stressors may act as triggers in a psyche already vulnerable due to previous exposures. It is also important to consider the possible association of burnout with socioeconomic vulnerabilities, as nursing technicians are a group with lower income compared to other professionals. These data suggest the importance of paying attention to potentially predisposing conditions that, even if more precociously installed in the trajectory of these individuals, seem to have left these professionals more vulnerable to burnout in the pandemic scenario."* **22** *(our translation)*

This study highlighted the vulnerability of healthcare professionals to emotional distress during the COVID-19 pandemic. The sample, composed of various professional categories, revealed high levels of burnout and clinically significant depression, particularly among nursing technicians. Therefore, it is important to regularly monitor the mental health of these professionals, especially regarding symptoms of depression, anxiety, exhaustion, and suicide risk. Adequate psychiatric treatment should be provided for those experiencing more severe issues.

There have been several articles published on the impact of misinformation on mental health, particularly among healthcare professionals. It's important highlight the importance of accurate information and public health messaging in mitigating these negative effects.**38** Data show that misinformation can lead to increased stress, anxiety, and burnout among healthcare workers, and they call for greater efforts to combat misinformation.**39**

In the same way, a survey conducted by the Oswaldo Cruz Foundation (Fiocruz) in 2020 with over 20,000 healthcare professionals from the Brazilian Unified Health System (SUS) showed that 83.5% of them reported some kind of impact on their mental health during the pandemic, such as anxiety, sadness, fear, irritability, and insomnia.**23**

Other studies have also pointed to the importance of mental health care for healthcare professionals during and after the pandemic.

In 2022, the World Health Organization (WHO) released the largest global review on mental health since the turn of the century. The Comprehensive Mental Health Action Plan 2013-2030 provides strategies for governments, academics, healthcare professionals, civil society, and other stakeholders to support the promotion of mental health, highlighting the importance of the topic. **37**

Conclusion

The discussion on the impact of the COVID-19 pandemic on the mental health of healthcare professionals has highlighted several important findings. Studies have shown that healthcare professionals are at increased risk of experiencing mental health issues such as anxiety, depression, burnout, and post-traumatic stress disorder (PTSD) due to their high workload, exposure to the virus, and lack of support.**24**

However, there are also various resources available to support the mental health of healthcare professionals during the pandemic, including counseling services, mental health hotlines, peer support groups, and online mental health resources. Additionally, the use of telehealth and digital mental health interventions, such as chatbots and virtual reality therapy, may also provide a promising solution for increasing access to mental health care.**25-8**

Moreover, there is growing interest in the use of artificial intelligence (AI) to support the mental health of healthcare professionals. AI-based tools such as chatbots and predictive analytics have the potential to provide personalized mental health support and identify individuals who may be at risk of developing mental health issues.**29-32**

Overall, the discussion highlights the need for ongoing support for the mental health of healthcare professionals during and beyond the pandemic, and the potential for AI-based tools to contribute to this support. **33**

The public health implications of the impact of misinformation on the mental health of healthcare professionals during COVID-19 are significant.

The findings suggest that healthcare organizations and policymakers should prioritize the development of interventions to support the mental health of healthcare professionals during pandemics and other crises.**34- 36**

Some potential interventions could include:

– Providing regular mental health support and resources for healthcare professionals

– Offering training on coping strategies for managing stress and burnout

– Implementing policies to address the spread of misinformation and provide accurate information to healthcare professionals

– Encouraging a culture of openness and support in healthcare organizations, where healthcare professionals can feel comfortable discussing their mental health concerns without fear of stigma or discrimination

– By addressing the mental health needs of healthcare professionals, organizations and policymakers can not only support the well-being of these individuals, but also ensure the provision of high-quality care to patients during public health crises.

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