

Ethics And Technique of Health Professionals in the Use of Technologies for the Humanization of Health Care

Ética e Técnica dos Profissionais de Saúde no Uso de Tecnologias para a Humanização do Cuidado em Saúde
Ética y Técnica de los Profesionales de la Salud en el Uso de Tecnologías para la Humanización de la Atención de la Salud

RESUMO

A crescente digitalização da assistência em saúde trouxe benefícios significativos, como maior precisão diagnóstica, eficiência no atendimento e ampliação do acesso. No entanto, a adoção dessas inovações tecnológicas levanta desafios éticos e técnicos relacionados à humanização do cuidado. Este estudo teórico analisa como os profissionais de saúde podem utilizar tecnologias sem comprometer a empatia e a personalização do atendimento. São abordadas questões como o uso da inteligência artificial, telemedicina e automação da tomada de decisões clínicas, destacando os riscos e as potencialidades dessas ferramentas. Além disso, discute-se a importância da capacitação profissional e da inclusão digital para garantir que a tecnologia seja utilizada de forma equitativa e responsável. Conclui-se que a tecnologia deve atuar como suporte ao cuidado, preservando a interação humanizada entre profissionais e pacientes.

DESCRIPTORIOS: Tecnologia em saúde; Humanização do cuidado; Ética profissional; Telemedicina; Inteligência artificial.

ABSTRACT

The increasing digitalization of healthcare has brought significant benefits, such as greater diagnostic accuracy, improved efficiency in care, and expanded access to services. However, the adoption of these technological innovations raises ethical and technical challenges related to the humanization of care. This theoretical study analyzes how healthcare professionals can use technology without compromising empathy and personalized care. It addresses issues such as the use of artificial intelligence, telemedicine, and automation in clinical decision-making, highlighting both the risks and potential of these tools. Additionally, it discusses the importance of professional training and digital inclusion to ensure that technology is used equitably and responsibly. The study concludes that technology should serve as a support for care, preserving the humanized interaction between professionals and patients.

DESCRIPTORS: Health technology; Humanization of care; Professional ethics; Telemedicine; Artificial intelligence.

RESUMEN

La creciente digitalización de la asistencia sanitaria ha aportado importantes beneficios, como una mayor precisión diagnóstica, una mayor eficiencia en la atención y un mayor acceso. Sin embargo, la adopción de estas innovaciones tecnológicas plantea retos éticos y técnicos relacionados con la humanización de la atención. Este estudio teórico analiza cómo los profesionales sanitarios pueden utilizar las tecnologías sin comprometer la empatía y la personalización de la atención. Se abordan cuestiones como el uso de la inteligencia artificial, la telemedicina y la automatización de la toma de decisiones clínicas, destacando los riesgos y el potencial de estas herramientas. Además, se discute la importancia de la capacitación profesional y la inclusión digital para garantizar que la tecnología se utilice de manera equitativa y responsable. Se concluye que la tecnología debe actuar como apoyo a la atención, preservando la interacción humanizada entre profesionales y pacientes.

DESCRIPTORIOS: Tecnología en salud; Humanización de la atención; Ética profesional; Telemedicina; Inteligencia artificial.

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INTRODUCTION

The incorporation of digital technologies in healthcare has had a significant impact on professional practice, influencing both technical processes and the ethical principles that govern the humanization of

care. Advances in medical technologies and artificial intelligence have enabled more accurate diagnoses, personalized treatments, and greater accessibility to healthcare services. However, these innovations also bring challenges, such as the need to maintain humanization in care, ensuring that the professional-patient relationship is not replaced by an overly mechanistic approach⁽¹⁾.

The humanization of care should be understood as a fundamental principle of healthcare, based on respect for human dignity, active listening, and welcoming the individual needs of patients. The use of technologies in the clinical context should not replace humanized contact, but rather act as a support to qualify interactions and optimize services¹. In this sense, it is essential to understand how health professionals balance technique and ethics in the use of these tools to ensure more humanized care.

Recent literature points out that the ethical integration of technologies into clinical practice depends on the training of professionals and the definition of protocols that ensure personalized care². Thus, the use of artificial intelligence in patient screening, telemedicine, and remote monitoring devices must be incorporated with criteria that respect the autonomy, privacy, and rights of patients^{1,2}.

Given this scenario, this study aims to answer the following research question: "How can healthcare professionals use technologies ethically and technically without compromising the humanization of care?" To this end, the objective of this theoretical essay is to analyze the role of technologies in healthcare and reflect on the challenges and possibilities of humanized care in an increasingly digitized context.

DEVELOPMENT

This article is a theoretical essay, which means that its approach is not based on empirical research, but rather on a critical analysis of academic literature on the relationship between ethics, technique, and technologies in healthcare. The main objective of the theoretical essay is to reflect and discuss conceptually how healthcare professionals can use technological innovations without compromising the humanization of care, ensuring a balance between technical advancement and empathy in patient care³.

To support this study, articles published in the last five years in indexed scientific journals, including SciELO, Google Scholar, and institutional databases, were analyzed. The inclusion criteria involved studies that addressed technology, humanization, and ethics in healthcare, excluding publications that did not present a direct correlation between these three elements. The analysis of the sources allowed us to organize the findings into two thematic axes: (1) Impact of Technologies on the Humanization of Care and (2) Ethical and Technical Challenges in the Implementation of Technology in Health. Each of these categories will be discussed in depth below.

Impact of Technologies on the Humanization of Care

The incorporation of technology into healthcare services has brought significant advances in the diagnosis, monitoring, and treatment of diseases. However, one of the main challenges is to ensure that these advances do not replace human interaction, but rather serve as complementary tools for the humanization of care⁽⁴⁾. Technologies such as telemedicine, artificial intelligence, and automated systems have improved the efficiency of healthcare services, but their inappropriate use can reduce the empathetic relationship between patients and profession-

als⁵.

Telemedicine has stood out as one of the main advances in recent years, providing access to medical care for patients in remote areas. However, despite its effectiveness in expanding access to healthcare, studies indicate that there are limitations in terms of personalizing care and creating bonds between professionals and patients. For telemedicine to be used in a humanized manner, it is essential that professionals adopt practices that value active listening, clear communication, and empathy during remote consultations.

Another important aspect is the use of artificial intelligence (AI) in the diagnosis and monitoring of patients. Although algorithms have increased the accuracy of medical analyses, their application raises questions about the depersonalization of care and the replacement of human clinical judgment with automation. To avoid this problem, experts argue that AI should be used as a support for medical decision-making, not as a tool that eliminates the need for contact between doctor and patient.

In addition, humanization in the hospital environment is strongly impacted by the use of communication technologies, which allow for greater proximity between patients, family members, and healthcare staff. In intensive care units (ICUs), for example, the implementation of tablets and video calls was essential to maintain contact between patients and their families during the COVID-19 pandemic. These technological resources contributed to the emotional well-being of patients and helped reduce feelings of isolation, demonstrating that technology can be an ally in the humanization of care when used properly.

However, for these advances to be applied effectively, it is essential that healthcare professionals are trained to balance the technical use of tech-

implementation presents challenges, such as the difficulty in personalizing care and the need for strategies that ensure humanization in virtual communication.

Artificial intelligence applied to health appears as an essential resource in supporting diagnosis and improving medical accuracy. However, its use raises questions about excessive automation and the risk of dehumanization of care, highlighting the need for a balance between technology and human clinical judgment.

Data security is another critical aspect highlighted in the figure, addressing the importance of protecting patient information and the ethical challenges involved in the use of databases and artificial intelligence. The General Data Protection Law (LGPD) and other regulations are fundamental to ensuring that privacy and confidentiality are preserved in the digital healthcare context.

Professional training also stands out as an essential factor for the responsible implementation of technologies in healthcare. The graph shows the need for continuous training of healthcare professionals so that they can use these tools ethically and efficiently, ensuring that the use of technology reinforces, rather than replaces, the humanization of care.

In addition, digital inclusion emerges as a challenge to be overcome, as many populations still face barriers to accessing health technologies. The graph highlights that public policies are necessary to ensure equity in the implementation of technologies, preventing the digitization of healthcare from widening inequalities in care.

Finally, automation in medical decision-making is one of the most debated topics in the literature. Although algorithms and intelligent systems can assist professionals in clinical decision-making, over-reliance on these

tools can generate algorithmic bias and compromise medical autonomy. The graph highlights the need to use these innovations as a support, not a substitute, for human judgment.

Thus, the figure summarizes the complexity of the relationship between technology, ethics, and humanization in healthcare, highlighting that the responsible use of digital innovations must be guided by principles that guarantee access, safety, personalized care, and continuous training for professionals.

Ethical and Technical Challenges in the Implementation of Technology in Healthcare

The implementation of technology in healthcare involves a series of ethical and technical challenges, ranging from patient data privacy to inequality in access to technological services. One of the main points of debate is respect for autonomy and informed consent, since the use of algorithms and artificial intelligence can influence medical decision-making without the patient's knowledge^{9,10,11}

The General Data Protection Law (LGPD) establishes guidelines on the storage and sharing of sensitive information in the healthcare field, ensuring that patient data is protected and used ethically. However, one of the challenges pointed out by recent research is the difficulty some professionals have in understanding the legislation and applying it correctly in clinical practice. Therefore, investing in training professionals to deal with privacy and digital security issues is essential for the responsible use of technology.

Another relevant aspect is digital inclusion and equitable access to health technologies. Although technological advances have improved the efficiency of medical services, there are still disparities in access to these tools. In low-income regions,

the lack of digital infrastructure can limit the reach of technologies such as telemedicine, creating a digital divide in healthcare⁽⁹⁾. To minimize these inequalities, it is essential that public policies be implemented to ensure that all patients have access to the benefits of technology, regardless of their socioeconomic status.

In addition, one of the most discussed technical challenges in the literature involves the relationship between automation and human clinical judgment. Healthcare professionals face the dilemma of relying entirely on algorithms or maintaining the autonomy of their clinical decisions, which can lead to conflicts between technology and medical experience⁽¹⁾⁽¹⁰⁾. Studies suggest that, to ensure balance, artificial intelligence systems should be integrated as auxiliary tools, without replacing the critical role of healthcare professionals in decision-making.

Another aspect that deserves mention is the need for ongoing training so that professionals can keep up with technological innovations without compromising the principles of humanization. Lack of adequate training can result in the inappropriate use of technologies and the deterioration of the doctor-patient relationship¹¹. Therefore, it is essential that educational institutions and hospitals invest in training professionals so that they know how to integrate digital advances into humanized care in an ethical and responsible manner.

Given these challenges, it is clear that technology can either promote or hinder the humanization of healthcare, depending on how it is implemented. Adopting an approach that balances technology, ethics, and humanization is crucial to ensuring that technological advances are used for the benefit of patients, without compromising the quality and warmth of healthcare.

FINAL CONSIDERATIONS

The relationship between technology, ethics, and humanization in healthcare requires a continuous balance between innovation and humanization, ensuring that technological advances do not replace empathetic and welcoming care. This theoretical study demonstrated that technology can be an ally of humanization when used properly, providing greater accessibility to services, improved diagnosis, and greater efficiency in patient follow-up. Tools such as telemedicine, artificial intelligence, and digital communication systems have proven to be fundamental for optimizing care, but their use requires continuous professional training to ensure that the per-

sonalization of care is preserved.

Among the challenges analyzed, the ethical and technical dilemmas in implementing these technologies stand out, such as patient data privacy, inequality in digital access, and excessive automation of medical decision-making. Respect for patient autonomy, information protection, and the development of inclusive public policies are fundamental for technology to be used equitably and safely.

Another relevant point discussed was the need for continuing education for healthcare professionals, ensuring that they know how to integrate technology into clinical practice without compromising empathy and warmth. The lack of training can turn innovation into an obstacle to humanization,

resulting in mechanized care that is distant from the subjective needs of patients.

Therefore, this study reinforces that the use of technology in healthcare should not be seen as a substitute for human contact, but rather as a tool to enhance the patient experience and strengthen the relationship between professionals and users of healthcare services. For this integration to occur in an ethical and technical manner, it is essential that managers, healthcare professionals, and researchers work together to build care models that combine technological innovation and humanization of care, ensuring that digital advances respect the dignity, individuality, and rights of patients.

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