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Ethical challenges and Artificial Intelligence in clinical practice

Olga Kadda

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EDITORIAL ARTICLE

ETHICAL CHALLENGES AND ARTIFICIAL INTELLIGENCE IN CLINICAL PRACTICE

The contemporary digital landscape, characterized by unprecedented ease of internet access, has exerted a significant influence across all disciplines, including clinical practice. Artificial Intelligence (AI) is a major innovation in computer science that has simplified both the access and use of information. The integration of AI into clinical practice has provided significant benefits, particularly by enhancing diagnostic processes through its ability to analyze large volumes of data in a short time. Krittanawong¹ noted that, although the use of AI in clinical practice is inevitable, it has not entirely replaced the need for human intervention. The primary applications of AI in clinical settings include its role in decision-making processes, especially in complex or chronic medical cases, the provision of diagnostic support, the simplification of treatment options and the prediction of potential medical conditions based on patient data. The use of machines has not eliminated the responsibility of healthcare professionals to prioritize patient needs and well-being, as careful evaluation is required to validate the outputs generated by AI algorithms. Nevertheless, despite the significant benefits that artificial intelligence offers to both clinicians and patients, important ethical concerns remain that warrant further consideration. One of the key ethical challenges associated with the integration of artificial intelligence into clinical practice is the reduction of human contact, which plays a crucial role in addressing patients' psychological and emotional status. Bajwa et al.³ argued that treatment plans should adopt a holistic approach, encompassing all aspects of the individual, including the need for human interaction and interpersonal communication. However, with the widespread adoption of artificial intelligence in clinical settings, broader patient needs may remain insufficiently addressed, as physicians increasingly rely on intelligent systems to perform routine and time-consuming tasks.⁴ Medical professionals are trained to establish and maintain a functional and therapeutic patient-physician relationship, which requires empathy and effective communication. For instance, when patients attend a healthcare facility, they are often required to undergo medical procedures involving technological systems. These procedures aim to provide comprehensive information regarding their health status and diagnosis. Although clinicians may be present when communicating results, adequate time is often unavailable to provide emotional support, particularly when delivering unfavorable news. Similarly, although intelligent systems are designed to ensure accuracy and efficiency, they remain susceptible to error. Krittanawong¹ noted that, while artificial intelligence is often perceived as consistently reliable, there are instances in which it may generate conflicting information. In clinical practice, such discrepancies can be costly and, in some cases, may result in severe or even fatal outcomes. In medical terms, this may constitute a misdiagnosis which can occur when artificial intelligence produces inaccurate results despite analyzing patient-related data. Without appropriate verification to ensure that the results generated by intelligent systems accurately reflect a patient's condition, there is a risk that individuals may be provided with incorrect information.^{5,6} Consequently, the prescribed treatment may also be inappropriate. In some cases, this may lead to severe adverse outcomes, including loss of life, while in others, patients may experience harmful side effects due to incorrect medication. Weiner et al.⁷ argued that, in such circumstances, it is often extremely difficult for patients to successfully pursue legal action against healthcare

institutions for misdiagnosis. Transparency is a fundamental ethical principle that guides medical practice. It requires full disclosure during the interaction between healthcare professionals and patients to ensure that appropriate decisions are made regarding an individual's health status.^{8,9,10}

Furthermore, the principle of informed consent affirms that patients have the right to be fully informed about all aspects of their care, including how their personal information is collected and used. The integration of artificial intelligence into clinical practice raises concerns regarding both transparency and informed consent, as intelligent systems not only collect but also store patient data. In many cases, healthcare institutions may not adequately inform patients about how their medical information is utilized to support and train these systems.⁴ Artificial intelligence algorithms rely on continuous data input to enhance their performance and enable future analysis and interpretation. The increasing reliance on artificial intelligence in clinical settings therefore constitutes a significant ethical concern. From an ethical perspective, it is important to question whether healthcare professionals may depend excessively on automated systems for diagnosis and treatment, rather than applying critical thinking and clinical judgment.¹¹ Prior to the widespread adoption of such technologies, clinicians relied primarily on their analytical skills to formulate potential diagnoses based on presenting symptoms. This process was essential in promoting continuous learning and ensuring that professionals remained up to date with developments in medical practice.

However, in the modern era, there is growing concern that clinicians may become overly dependent on artificial intelligence, as it simplifies many aspects of their work. This reliance may reduce motivation for professional development and lead to a decline in critical thinking skills, as automated systems increasingly perform key clinical tasks.

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Olga Kadda
RN, MSc, PhD, Liaison Nurse,
Department of Electrophysiology and Pacing
Onassis Hospital