

Ethical Considerations of Disagreements Between Clinicians and Artificial Intelligence Recommendations: A Scoping Review

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Abstract : OBJECTIVES: Artificial intelligence (AI) tools are becoming more prevalent in healthcare settings, particularly for diagnostic and therapeutic recommendations, with an expected surge in the incoming years. The bedside use of this technology for clinicians opens the possibility of disagreements between the recommendations from AI algorithms and clinicians' judgment. There is a paucity in the literature analyzing nature and possible outcomes of these potential conflicts, particularly related to ethical considerations. The goal of this scoping review is to identify, analyze and classify current themes and potential strategies addressing ethical conflicts originating from the conflict between AI and human recommendations. METHODS: A protocol was written prior to the initiation of the study. Relevant literature was searched by a medical librarian for the terms of artificial intelligence, healthcare and liability, ethics, or conflict. Search was run in 2021 in Ovid Cochrane Central Register of Controlled Trials, Embase, Medline, IEEE Xplore, Scopus, and Web of Science Core Collection. Articles describing the role of AI in healthcare that mentioned conflict between humans and AI were included in the primary search. Two investigators working independently and in duplicate screened titles and abstracts and reviewed full-text of potentially eligible studies. Data was abstracted into tables and reported by themes. We followed methodological guidelines for Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR). RESULTS: Of 6846 titles and abstracts, 225 full texts were selected, and 48 articles included in this review. 23 articles were included as original research and review papers. 25 were included as editorials and commentaries with similar themes. There was a lack of consensus in the included articles on who would be held liable for mistakes incurred by following AI recommendations. It appears that there is a dichotomy of the perceived ethical consequences depending on if the negative outcome is a result of a human versus AI conflict or secondary to a deviation from standard of care. Themes identified included transparency versus opacity of recommendations, data bias, liability of outcomes, regulatory framework, and the overall scope of artificial intelligence in healthcare. A relevant issue identified was the concern by clinicians of the "black box" nature of these recommendations and the ability to judge appropriateness of AI guidance. CONCLUSION AI clinical tools are being rapidly developed and adopted, and the use of this technology will create conflicts between AI algorithms and healthcare workers with various outcomes. In turn, these conflicts may have legal, and ethical considerations. There is limited consensus about the focus of ethical and liability for outcomes originated from disagreements. This scoping review identified the importance of framing the problem in terms of conflict between standard of care or not, and informed by the themes of transparency/opacity, data bias, legal liability, absent regulatory frameworks and understanding of the technology. Finally, limited recommendations to mitigate ethical conflicts between AI and humans have been identified. Further work is necessary in this field.

Keywords : ethics, artificial intelligence, emergency medicine, review

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