

POSTER ABSTRACT

The wicked problem of implementing ethics in AI-based healthcare applications: a scoping review

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Introduction

While there is a strong culture of medical ethics in healthcare applications, AI-based Healthcare Applications (AIHA) are challenging the existing ethics and regulatory frameworks. While views on the benefits of AI in healthcare vary, the ontological and epistemic consequences of AIHA on its users are likely to be significant. For example, AIHA has potential to reshape the patient-doctor relationship. Understanding how ethics are implemented in AIHA is critical, yet it is still unclear how it is done. We will present the findings of a review that explored how ethics have been operationalised in AIHA.

Aims Objectives Theory or Methods

This review aimed to survey how AI ethics frameworks have been implemented and evaluated in healthcare applications, and map the scope, challenges and practices of these initiatives. We conducted a systematic scoping review, searching OvidMEDLINE, Scopus, EMBASE, Web of Science and grey literature related to the implementation of ethics frameworks in AI applications in healthcare published between 2015 and 2020. This scoping review followed the Joanna Briggs Institute's (JBI) guidance for systematic scoping reviews and the preferred reporting items for systematic reviews and meta-analyses statement (PRISMA).

Highlights or Results or Key Findings

4444 peer-reviewed and grey literature articles were title and abstract screened, 480 underwent a full-text review. Narrative synthesis was performed on the 33 included articles. AIHA included Clinical Decisions Support Systems, drones, and Intelligent Assistive Technologies, such as virtual bots and robots. Operationalising ethics frameworks is a complex endeavour with challenges at different levels: ethics principles, design, technology, organisational, and regulatory, which calls for an interdisciplinary approach to AIHA. Among identified strategies, some offered proactive, contextual and organisational approaches involving stakeholders' consultations. Crucially, the balance of power between producers and users of AIHAs is unclear in the identified strategies and the decision-making process lacks transparency. While critical for achieving transparency and clarity, clear measures of success of the implementation of an ethics frameworks could not be

found. Because the more widely adopted an AI system is, the safer it becomes, establishing trust in the system is a wicked issue.

Conclusions

Operationalising an ethics framework in AIHA requires contextual, proactive and inclusive approaches. Transparency of the process is needed, especially in light of the power imbalance between the consumers and the providers. Cross-pollination between computer, medical and social sciences promises to yield the most comprehensive ways to tackle this wicked issue.

Implications for applicability/transferability sustainability and limitations

There is a need to establish a dialogue for a shared meaning and understanding of AIHA to provide wholesome ethical foundations for its implementation.

While the review strived to include grey literature, private sector initiatives are likely underrepresented. Because of the language barrier, Chinese, Korean and Japanese initiatives are likely underrepresented.