

Data-driven shared decision making in oncology

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Impact statement

Sociocultural impact

In this research, a fundamental exploration was undertaken to identify and overcome barriers hindering the effective adoption of AI in healthcare. It focuses on patient-centric perspectives, bringing together aspects of health literacy, AI integration, and patient-physician communication. The research, by uncovering these barriers and offering pragmatic solutions, aims to narrow gaps in healthcare decision-making. The overarching goal is to ensure that advanced AI technologies become accessible and beneficial across diverse sociocultural contexts. A central theme revolves around addressing the challenge of personalizing information to suit individual patient preferences, with an emphasis on fostering clarity and trustworthiness in personalized healthcare solutions. Beyond these aspects, the research significantly contributes by delving into the sociocultural implications of AI adoption, meticulously examining the varied perspectives and attitudes of patients toward AI in healthcare, particularly in high-stakes decisions. This exploration aims to offer valuable insights, shaping the ethical and practical implementation of AI, thus fostering a healthcare landscape that is not only technologically advanced but also deeply patient-centered and inclusive. The potential contribution lies in fostering a broader societal understanding of the role of technology in healthcare decision-making, addressing misconceptions and fostering trust between patients and AI.

Scientific Impact

Scientifically, this research addresses crucial challenges in healthcare decision-making, specifically in applying AI. One significant contribution is the development of non-black box AI models, enhancing transparency in algorithms. Focused on breast and prostate cancer, the research explores shared decision-making nuances, demonstrating practical applications for improved patient outcomes. It also investigates incorporating patient preferences, vital for designing personalized tools with clearer information. These insights advance our understanding of AI adoption in healthcare, offering practical solutions for bridging complexities in shared decision-making. The implications extend to shaping transparent, patient-centered healthcare approaches, with findings disseminated through academic channels for broader accessibility.

The impact of this research extends across various stakeholders. Healthcare providers benefit from improved decision-making tools, ensuring more informed and transparent practices. Patients experience enhanced outcomes through personalized tools that prioritize their preferences and offer clearer information, empowering

them in the decision-making process. Policymakers and researchers gain valuable insights into practical applications and ethical considerations surrounding AI in healthcare. The dissemination of findings through academic channels further contributes to informed decision-making and policy development in the field of AI adoption in healthcare.