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Pitfalls of Artificial Intelligence in Medicine

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Abstract. Artificial Intelligence (AI) offers great promise for healthcare, but integrating it comes with challenges. Over-reliance on AI systems can lead to automation bias, necessitating human oversight. Ethical considerations, transparency, and collaboration between healthcare providers and AI developers are crucial. Pursuing ethical frameworks, bias mitigation techniques, and transparency measures is key to advancing AI's role in healthcare while upholding patient safety and quality care.

Keywords. Artificial intelligence, patient safety, health personnel, social responsibility

1. Introduction

AI in medicine has rapidly advanced, offering benefits like precision medicine and improved patient care. However, challenges such as data privacy and decision-making biases must be addressed. This review highlights the potential and limitations of AI in healthcare, emphasizing the importance of prioritizing patient safety and ethical considerations.

2. Methodology

This review used a comprehensive approach to investigate the risks of AI in medicine. The process included an extensive literature search, selection of relevant sources, and detailed analysis of ethical and technical challenges associated with AI.

3. Results and Discussion

3.1. Over-reliance on AI

Overreliance on AI in clinical decision-making can lead to "automation bias," where users unquestioningly follow AI suggestions. It's important to consider technical, human,

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and organizational factors when implementing AI systems in healthcare to avoid errors and patient harm [1]. Evaluating AI-enabled clinical decision support systems is challenging, highlighting the need for thorough evaluation and monitoring [2]. Lyell et al. (3) emphasize the need for human oversight in AI medical devices, highlighting the risks of relying solely on AI for clinical decisions. Calisto et al. (4) found that cautious use and human oversight are necessary for AI medical imaging diagnosis due to potential false results. Haselager et al. (5) propose "reflection machines" (RMs) to increase human control over AI. Lastly, Rajpurkar et al. (6) stress human-AI collaboration in healthcare for improved clinical decision-making and emphasize crucial human oversight for patient safety.

3.2. Ethical issues and future research

In healthcare and AI, ethics are crucial for responsible implementation. Healthcare providers and AI developers share responsibilities for patient privacy, consent, and preventing biases in AI systems. Efforts are needed to reduce biases in AI algorithms and enhance transparency. Collaboration among AI researchers, healthcare providers, and ethicists is crucial for creating ethical frameworks [7].

4. Conclusions

AI in medicine has the potential to improve healthcare outcomes, but challenges like overreliance on AI systems and the need for human oversight must be addressed. Careful decision-making and ethical considerations, such as patient privacy and transparency, are essential to unlock AI's full potential while upholding high standards of patient safety and quality care.

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