Volume 6, January/June 2025, Issue 1, pp. 65-66

Interdisciplinary Journal of Acute Care

Journal homepage: ijac.lums.ac.ir

Online ISSN: 3060-7159

AI-Augmented Self-Assessment in Healthcare: Balancing Accessibility, Accuracy, and Equity

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Letter To the Editor

Publisher: Lorestan University of Medical Sciences

Cite this article: Shahidi Delshad E. AI-augmented self-assessment in healthcare: balancing accessibility, accuracy, and equity. *Interdiscip. J. Acute Care. 2025, 6*(1), 65-66.

https://doi.org/ 10.22087/ijac.2025.531591.1065

Dear Editor,

In recent years, a growing number of patients have increasingly relied on large language models (LLMs) and other artificial intelligence (AI) tools to interpret their symptoms prior to visiting a clinic or hospital. Advocates assert that these technologies democratize access to health information and empower patients to make informed decisions. They may even alleviate unnecessary visits that burden already strained healthcare systems [1]. However, underlying this promise of empowerment is the risk of misinformation, over- or under-triage, and exacerbated health disparities.

As AI-mediated self-triage becomes more prevalent, it is imperative to carefully evaluate its contributions against its potential harms. Surveys indicate that up to 40 percent of online health seekers report feeling more confident about subsequent steps after interacting with an AI tool [2]. For individuals in remote areas or those facing long wait times, this reassurance can alleviate anxiety and reduce unnecessary clinic visits, thereby freeing up limited resources for genuinely urgent cases. A 2025 systematic review found that LLMs achieved moderate triage accuracy (57.8–76.0 percent), comparable to—or in some instances surpassing—both standard symptom-assessor applications and layperson judgment (47.3–62.4 percent) [3]. However, these studies often rely on retrospective datasets and controlled scenarios, which may not fully capture real-world variability in patient presentations or the influence of user interface design on decision-making.

From the clinician's perspective, systematic comparisons reveal that while some AI models match human performance in identifying common conditions, they struggle with atypical presentations and complex multi-morbidity. For instance, GPT-4 placed the correct diagnosis within its top three suggestions approximately 42 percent of the time, yet identified the correct primary diagnosis only 22 percent of the time [4]. A reassuring output of "likely viral infection" in a patient with evolving myocarditis may delay critical intervention, whereas an overly cautious algorithm might recommend emergency care for benign issues, contributing to overcrowded emergency departments and diverting attention from truly critical patients.

Health system administrators have noted that AI-driven self-triage can reshape care pathways, sometimes for the better. Integrating AI tools into telemedicine platforms can direct high-risk cases directly to on-call providers, thereby shortening the time to treatment [5]. However, without robust oversight, these same tools could create backlogs when false positives trigger unnecessary referrals. To maximize the benefits, administrators must monitor AI output metrics, track referral completion rates, and ensure seamless handoffs between virtual assessments and in-person care.

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DOI: 10.22087/ijac.2025.531591.1065

Ethical considerations further complicate this issue. AI models trained on datasets that under-represent certain ethnic groups or socioeconomic strata may yield biased recommendations, deepening existing health inequities. Patients with low health literacy or limited English proficiency may misinterpret AI guidance and trust it as a substitute for professional evaluation. Clear disclaimers, culturally sensitive interfaces, and multimodal explanations (text, audio, and graphics) are essential for mitigating these risks and fostering digital health equity.

The efficacy of AI-driven self-assessment is contingent upon its judicious implementation. It is imperative to invest in prospective validation studies encompassing diverse populations, establish regulatory frameworks that ensure transparency in model performance, and educate both patients and healthcare providers regarding the capabilities and limitations of these tools. Interdisciplinary collaboration, involving nurses, physicians, data scientists, ethicists, and patient advocates, is essential for designing AI-enhanced care pathways that improve safety, efficiency, and equity.

Consequently, we urge all stakeholders in the health sciences to take action: clinicians should rigorously evaluate and monitor AI recommendations; health information technologists should develop interfaces that emphasize clarity and inclusivity; administrators should integrate AI into workflows with appropriate safeguards; educators should incorporate AI literacy into professional training; policymakers should establish guidelines that balance innovation with patient protection; and patients should actively engage by critically appraising AI outputs, participating in shared decision-making, and reporting inaccuracies to refine these systems. By uniting our expertise and prioritizing patient welfare, we can leverage the potential of AI self-assessment while mitigating its possible drawbacks.

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