

Abstract

Empathic AI and Conversational Agents in Clinical Care: Systematic Review of Randomized Controlled Trials

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Citation: Doru MR, Raimondi F, Duka R. “Empathic AI and Conversational Agents in Clinical Care: Systematic Review of Randomized Controlled Trials” (2026) *International Journal of Health Supplements* 1(Suppl. 1):39. Supp. DOI: <https://doi.org/10.82051/ijhs-2026-1>

Introduction. This systematic review synthesizes randomized controlled trials (RCTs) published between 2016 and 2026 investigating artificial intelligence systems integrating emotional intelligence or empathic features within clinical decision support and healthcare communication.

Methods. PRISMA 2020 guidelines was conducted in PubMed, CINAHL, Scopus, and Embase. Studies were included if they: (1) had a randomized controlled design; (2) involved AI as a clinical decision support or communication tool; (3) incorporated empathy or emotional intelligence components; and (4) reported quantitative outcomes related to decision making, user experience, or communication.

Results. Forty-six RCTs were initially identified with inclusion criteria. Studies examined AI applications in mental health support, chronic disease management, and interventions aimed at reducing anxiety and stress. Overall, AI systems demonstrated potential to enhance emotional support, improve adherence to treatment, and promote caring behaviors and patient self-care. In several trials, AI-supported tools improved communication processes and patient engagement in care.

Discussion. Evidence from RCTs suggests that AI with empathic or emotional features may support clinical decision processes and improve user experience in healthcare settings. Although promising, the current evidence base remains limited. Further large-scale RCTs with patient-centered outcomes are required to confirm the effectiveness and safety of empathic AI and to guide its integration into clinical practice.

Keywords: Artificial Intelligence, Empathy, Emotional Intelligence

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Funding: This research received no external funding. **Conflict of Interest:** The authors declare no conflict of interest.