

Chapter 23

Augmenting Human Empathy: AI-assisted Solutions for Cross-cultural Healthcare Communication

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Abstract

Healthcare faces a dual challenge: communication failures—especially in cross-cultural settings—contribute significantly to patient harm, while the rapid integration of AI risks eroding the human empathy essential to care. This paper proposes a “Cultural AI Empathy Assistant” designed not to replace clinicians, but to enhance their ability to recognise and respond to culturally specific expressions of distress. Drawing on international research, evidence of empathy’s clinical benefits, a global database of AI-related harms, and an ethical framework prioritising human connection, we outline a model for AI as a cultural interpreter and empathy amplifier. By supporting clinicians with culturally informed insights, this approach aims to reduce communication-related risks and cultivate “ultra-empathic” practitioners whose capabilities exceed those of humans or AI alone.

Keywords: *Artificial Intelligence, Empathy, Cross-cultural Healthcare, Patient Safety, Human-AI Collaboration*

Introduction

The Twin Problem

Healthcare faces a dual crisis threatening the quality and humanity of patient care. First, communication failures contribute to around one in ten patient safety incidents globally¹, with risks heightened in cross-cultural encounters where linguistic minority populations experience 40% higher rates of adverse events². Cultural differences in how pain, distress, and emotional needs are expressed, potentially leading to misdiagnoses³.

Second, artificial intelligence (AI) and related technologies are rapidly transforming healthcare delivery⁴. While AI systems can improve efficiency and outcomes, their increasing use risks weakening

¹Leila Keshtkar et al., “Impacts of Communication Type and Quality on Patient Safety Incidents: A Systematic Review,” *Annals of Internal Medicine* 178, no. 5 (2025): 687–700, <https://doi.org/10.7326/ANNALS-24-02904>.

²The Joint Commission, “One Size Does Not Fit All: Meeting the Health Care Needs of Diverse Populations,” accessed September 14, 2022, https://www.researchgate.net/publication/255616396_One_Size_Does_Not_Fit_All_Meeting_the_Health_Care_Needs_of_Diverse_Populations.

³Claire Narayan, “Culture’s Effects on Pain Assessment and Management,” *American Journal of Nursing* 110, no. 4 (2010): 38–47, <https://doi.org/10.1097/01.NAJ.0000370157.33223.6d>.

⁴Yaojue Xie, Yuansheng Zhai, and Guihua Lu, “Evolution of Artificial Intelligence in Healthcare: A 30-Year Bibliometric Study,” *Frontiers in Medicine* 11 (2025): 1505692, <https://doi.org/10.3389/fmed.2024.1505692>.

the empathic human connections central to care⁵. These risks may be underestimated due to under-reporting of harms. In cross-cultural contexts, AI systems trained on limited datasets may fail to detect culturally specific expressions of distress, further exacerbating inequities⁶. Traditional cultural competency training is insufficient to address these challenges in technologically mediated care⁷.

The Research Gap

Despite strong evidence that empathy benefits both patients and practitioners, this knowledge has not been fully integrated into AI-enabled healthcare. Existing research often prioritises efficiency and diagnostic accuracy over human connection, or frames AI as either beneficial or harmful without identifying a middle ground.

Interestingly, AI-generated responses have been rated as more empathic than human ones in 85% of studies⁸, likely reflecting clinician burnout rather than superior machine empathy. In response, we propose a middle path: a Cultural AI Empathy Assistant that enhances human empathy while addressing cross-cultural communication challenges, building on our broader research programme and international collaborations⁹.

Human-AI Collaborative Empathy: A New Paradigm

Our proposed paradigm shift requires reimagining AI's role from replacement to enhancement, positioning technology as a cultural interpreter and empathy facilitator rather than an autonomous care provider. Our culturally sensitive AI Empathy Assistant is designed around three established research foundations:

1. **Built on best evidence:** Empathy reduces patient pain, depression, and anxiety, while raising quality of life. Studies also show that empathy reduces mortality¹⁰ while improving practitioner wellbeing¹¹. This data will be used to develop a framework to guide the development of our Cultural AI Empathy Assistant.

⁵Molly G. Smith, Thomas N. Bradbury, and Benjamin R. Karney, "Can Generative AI Chatbots Emulate Human Connection? A Relationship Science Perspective," *Perspectives on Psychological Science* 20, no. 6 (2025): 1081–99, <https://doi.org/10.1177/17456916251351306>.

⁶Syed Ali Haider et al., "The Algorithmic Divide: A Systematic Review on AI-Driven Racial Disparities in Healthcare," *Journal of Racial and Ethnic Health Disparities* 13, no. 1 (2026): 188–217, <https://doi.org/10.1007/s40615-024-02237-0>.

⁷Joseph R. Betancourt and Marina C. Cervantes, "Cross-Cultural Medical Education in the United States: Key Principles and Experiences," *The Kaohsiung Journal of Medical Sciences* 25, no. 9 (2009): 471–78, [https://doi.org/10.1016/S1607-551X\(09\)70553-4](https://doi.org/10.1016/S1607-551X(09)70553-4).

⁸Alastair Howcroft et al., "AI Chatbots Versus Human Healthcare Professionals: A Systematic Review and Meta-Analysis of Empathy in Patient Care," *medRxiv* (2025), <https://doi.org/10.1101/2025.06.09.25329258>.

⁹Jeremy Howick et al., "Effects of Empathic and Positive Communication in Healthcare Consultations: A Systematic Review and Meta-Analysis," *Journal of the Royal Society of Medicine* 111, no. 7 (2018): 240–52, <https://doi.org/10.1177/0141076818769477>;

¹⁰Hajira Dambha-Miller et al., "Association Between Primary Care Practitioner Empathy and Risk of Cardiovascular Events and All-Cause Mortality Among Patients With Type 2 Diabetes: A Population-Based Prospective Cohort Study," *The Annals of Family Medicine* 17, no. 4 (2019): 311–18, <https://doi.org/10.1370/afm.2421>.

¹¹Wilkinson et al., "Examining the Relationship Between Burnout and Empathy," 18–29.

2. **Safety monitoring:** All healthcare interventions carry the risk of harm, both anticipated and unanticipated. For example, when electronic medical records were introduced, they were hailed as time-saving devices for practitioners. Yet doctors ended up spending much of their time looking at screens rather than interacting with patients. To ensure that the Cultural AI Assistant helps and does not harm, we are establishing the world's largest database of AI-related harms.
3. **Ethical framework:** The framework will establish several foundational principles that guide the responsible development and deployment of empathy-augmenting AI systems.

Cultural Appropriateness

The Cultural AI Empathy Assistant will be trained on region-specific datasets capturing diverse cultural expressions of distress, enabling it to support clinicians in interpreting subtle, culturally grounded cues—for example, recognising that minimal verbal complaints in some contexts may signal significant pain, while more expressive language in others may reflect communication norms rather than clinical severity. Designed as a decision-support tool, it will enhance rather than replace clinical judgement through culturally informed insights. Its development will be guided by community-centred governance, led by a Patient Advisory Board and an Expert Working Group of patients and practitioners from diverse cultural backgrounds, ensuring the system reflects authentic lived experiences rather than algorithmic bias. Continuous consultation—from dataset development to system testing and refinement—will ensure cultural validity, trust, and accountability.

Global Impact

Our research will evaluate whether AI-augmented empathy training can develop “ultra-empathic” practitioners whose cultural sensitivity exceeds that of both unaugmented clinicians and AI systems alone, by integrating traditional empathy education with AI-supported cultural competency. These practitioners are expected to better recognise culturally specific expressions of distress, adapt communication across contexts, and sustain empathic engagement in diverse settings. This work is supported by the Global Network for Empathy in Healthcare, comprising 12 centres across nine countries (Australia, Brazil, France, India, Japan, Nigeria, Mexico, UK, US), which provides the infrastructure to develop, validate, and scale this approach internationally following the “Leicester Empathy Declaration”¹². Through region-specific AI models, interoperability for mobile populations, and cross-cultural validation studies, the programme aims to ensure that AI-augmented empathy is effective, adaptable, and respectful of local cultural norms worldwide.

Anticipating Risks and Challenges

Developing culturally representative datasets requires extensive community engagement to ensure authentic representation of diverse cultural expressions of distress. Our approach involves collaborative data collection with community partners, ensuring datasets reflect genuine cultural patterns rather than

¹²Global Empathy in Healthcare Network. 2025. “Global Empathy in Healthcare Network.” Accessed September 11, 2025. <https://www.global-empathy-in-healthcare.com>.

researcher assumptions about cultural communication. Relatedly, building trust amongst communities historically marginalised by healthcare systems requires transparent development processes and genuine community partnership. Our community engagement approach involves extensive consultation with cultural leaders, patient advocates, and community organisations through the development lifecycle¹³. Addressing concerns about cultural appropriation or misrepresentation involves ongoing community oversight and the ability for communities to withdraw consent if systems fail to meet cultural authenticity standards.

Conclusions

Healthcare stands at a critical juncture. The twin crises of communication failures and technological dehumanisation need not be inevitable trade-offs. Our research demonstrates that AI, designed with empathy at its core rather than efficiency alone, can address both simultaneously, reducing communication-related patient harm while strengthening rather than replacing human connection. The Cultural Empathy AI Assistant is a technological innovation and a paradigm shift: from AI as replacement to AI as amplifier of humanity's most essential clinical skill. Through international collaboration spanning nine countries, healthcare can embrace innovation while deepening, not diminishing, the empathic relationships that define compassionate care across all cultural boundaries.

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¹³Anna M. Anderson et al., "Building Trust and Inclusion with Under-Served Groups: A Public Involvement Project Employing a Knowledge Mobilisation Approach," *Research Involvement and Engagement* 10, no. 1 (2024): 122, <https://doi.org/10.1186/s40900-024-00647-2>.

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