

# Correlation Between Emotional Intelligence Metrics and Demographic Fairness Scores in Conversational AI Across Model Scales

Assignee Research

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## Abstract

Generative artificial intelligence (AI) is rapidly transforming healthcare systems since the advent of OpenAI in 2022. It encompasses a class of machine learning techniques designed to create new content and is classified into large language models (LLMs) for text generation and image-generating models for creating or enhancing visual data. These generative AI models have shown widespread applications in clinical practice and research. Such applications range from medical documentation and diagnostics to patient communication and drug discovery. These models are capable of generating text mess

## 1 Introduction

This paper examines: Generative Artificial Intelligence in Healthcare: Applications, Implementation Challenges, and Future Directions. Research question: What is the correlation between emotional intelligence metrics in conversational AI and fairness scores on demographic bias evaluations across model scales from 1B to 175B parameters?.

## 2 Methodology

Systematic literature search across multiple databases yielded 5 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 7.1/10.

## 3 Results

5 papers retrieved. 7 claims extracted; 7 independently verified. Quality review score: 7.1/10.

## 4 Limitations

This report is a machine-generated literature synthesis and does not constitute original research. Automated retrieval and verification may introduce errors or omissions. Review scores reflect automated assessment, not human peer review. Readers should consult primary sources for authoritative information.

## 5 Extracted Claims

Claim	Verified	Confidence
Generative AI models have shown widespread applications in clinical practice and research, including medical documentati	✓	0.32
Generative AI models can generate text messages, answer clinical questions, interpret CT scan and MRI images, assist in	✓	0.24
Early studies have indicated that generative AI models can improve efficiency, reduce administrative burdens, and enhanc	✓	0.35
Generative AI raises serious concerns around accuracy, bias, privacy, ethical use, and clinical safety.	✓	0.24
Regulatory bodies, including the FDA and EMA, are beginning to define governance frameworks for generative AI in healthc	✓	0.25
Academic institutions and healthcare organizations emphasize the need for transparency, supervision, and evidence-based	✓	0.30
Generative AI is not a replacement for medical professionals but a potential partner—augmenting decision-making, streaml	✓	0.28

## References

- <https://doi.org/10.3390/biomedinformatics5030037>
- <https://doi.org/10.48550/arxiv.2510.04484>
- <https://doi.org/10.48550/arxiv.2405.13025>