

# Artificial Intelligence Response to Common Medication Concerns with Heart Failure GDMT in Outpatient Setting

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## Background

The proposed study on evaluating the alignment of AI-generated responses with those of healthcare professionals in the context of Guideline Directed Medical Therapy (GDMT) for heart failure, and its impact on the efficiency and confidence of resident physicians. We begin by acknowledging the increasing role of AI in healthcare. Previous studies have shown AI's potential in diagnosing diseases, suggesting treatments, and even predicting patient outcomes with accuracy comparable to that of human clinicians in certain contexts. Particularly in primary care, AI tools have been shown to assist in decision-making, enhance diagnostic accuracy, and improve treatment planning.

Heart failure remains a leading cause of hospitalization among older adults, with significant morbidity and mortality rates. The application of AI in this area could revolutionize treatment approaches and patient management strategies in the outpatient setting.

This project aims to assess the congruence between AI-generated responses and professional healthcare advice in the context of GDMT for heart failure to improve patient outcomes and optimize clinical workflows.

## Objective

The primary objective of this project is to assess the degree of alignment between AI-generated responses and those provided by healthcare professionals in answering common questions related to Guideline Directed Medical Therapy (GDMT) for heart failure.

## Methods

The survey was introduced with an overview of the project, aimed at assessing how AI-generated responses to questions patients commonly asked concerning heart failure management and their impact on clinical workflow. Participants were given responses to preselected questions that were used to elicit AI responses, ensuring a standardized evaluation of AI performance across heart failure treatment medication classes. Following each AI response, participants recorded their assessments on a 20-question survey, divided evenly among four medication classes. The survey also featured a Likert scale section for rating agreement with statements on AI performance and a binary question to gauge perspectives on integrating AI assistance into clinical workflows, complemented by a comment area for additional insights.

Create 20 questions with 5 questions per GDMT Class

Entered questions into AI software and compile responses

Administer surveys with both questions and AI responses

## Results



Table 1: Participants' average Likert scale score in response to the 20 questions. 1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5 strongly agree

\*Participant 3 was incomplete and not included in the total average

Do you believe this AI technology would improve your clinical work

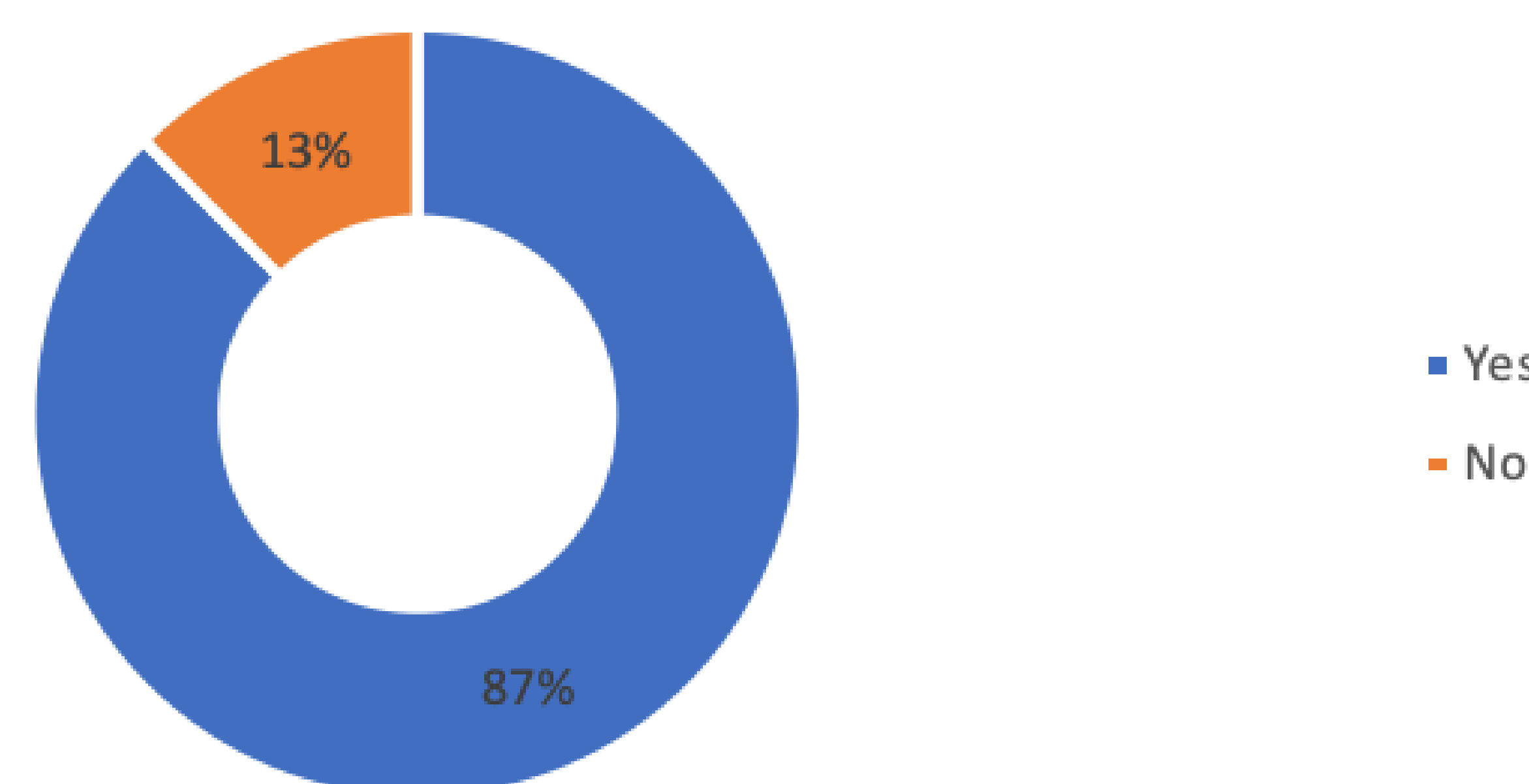


Chart 1: Pie chart with the percentage of participants that stated this technology would improve clinical workflow

## Discussion

A majority of the survey participants expressed neutral or favorable opinions toward AI responses to common queries, with 87% indicating that the implementation of AI technology could enhance clinical workflow efficiency. While most participants completed the survey in its entirety, one participant did not finish grading the AI responses but did express a belief in the potential utility of the technology in the second part of the survey. Notably, one participant consistently disagreed with the AI-generated responses and questioned the technology's utility in improving clinical practice, yet provided no constructive feedback. A primary limitation identified was the small sample size. Additionally, informal comments suggested the survey's length was considerable, implying a need for optimization in future iterations.

## Conclusion

This study underscores the potential integration of AI to facilitate patient communication and ensure medication adherence. Our research revealed that AI-generated advice aligns well with healthcare professionals' guidance and capability to improve clinical workflows. Despite a small sample size and some skepticism, the majority view AI as a beneficial adjunct in patient care. The enthusiasm for AI's role in healthcare, mirrored by our participants' responses, suggests a growing acceptance of its supportive function. Future research should address the noted limitations by expanding participant numbers and refining survey methods.

## References

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\*Asterisk

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