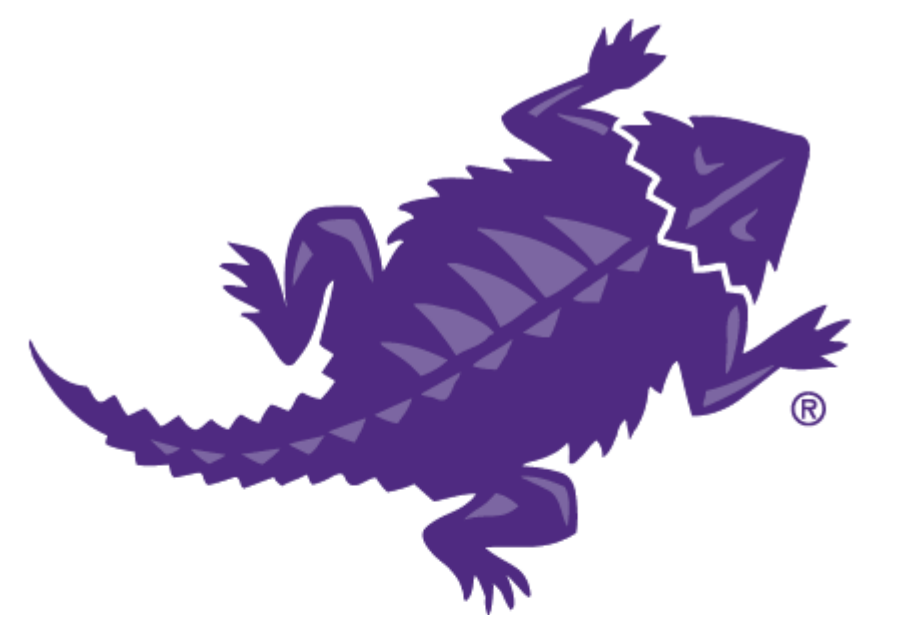# The Human Cost of AI: Bias, Trust, and Patient-Provider Interactions

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Introduction

Artificial Intelligence (AI) in Healthcare

∗ AI is transforming healthcare, enhancing efficiency and accuracy.

∗ Traditional AI automates routine tasks; generative AI (e.g., ChatGPT) enables advanced decision support.

∗ Its widespread availability raises concerns about trust, bias, and patient-provider relationships.

Bias & Health Disparities

∗ AI is trained on historical medical data that may contain systemic biases. Biases in AI models could reinforce or exacerbate healthcare disparities (Parra Bautista et al., 2023).

Trust & Patient-Provider Relationship

∗ Patients may use AI for self-diagnosis, leading to conflicts with providers (Hryciw et al., 2023).

∗ Overreliance on AI may weaken the human connection essential for effective treatment (Čartolovni et al., 2023).

Objectives

∗ Investigate AI's impact on bias and patient-provider interactions in healthcare.

∗ Explore how AI-driven diagnosis and treatment influence trust and healthcare disparities.

Research Question

How does AI-driven diagnosis and treatment influence patient-provider interactions, and what role does AI bias play in shaping trust and healthcare disparities?

Methods

Objectives

∗ Review and synthesize existing research on AI's impact on trust and bias in healthcare.

∗ Explore perceptions of trust and bias regarding the use of artificial intelligence (AI) in healthcare settings.

∗ Investigate how Adults in the US perceive the use of AI in healthcare settings, as well as perceptions of race-based bias in AI.
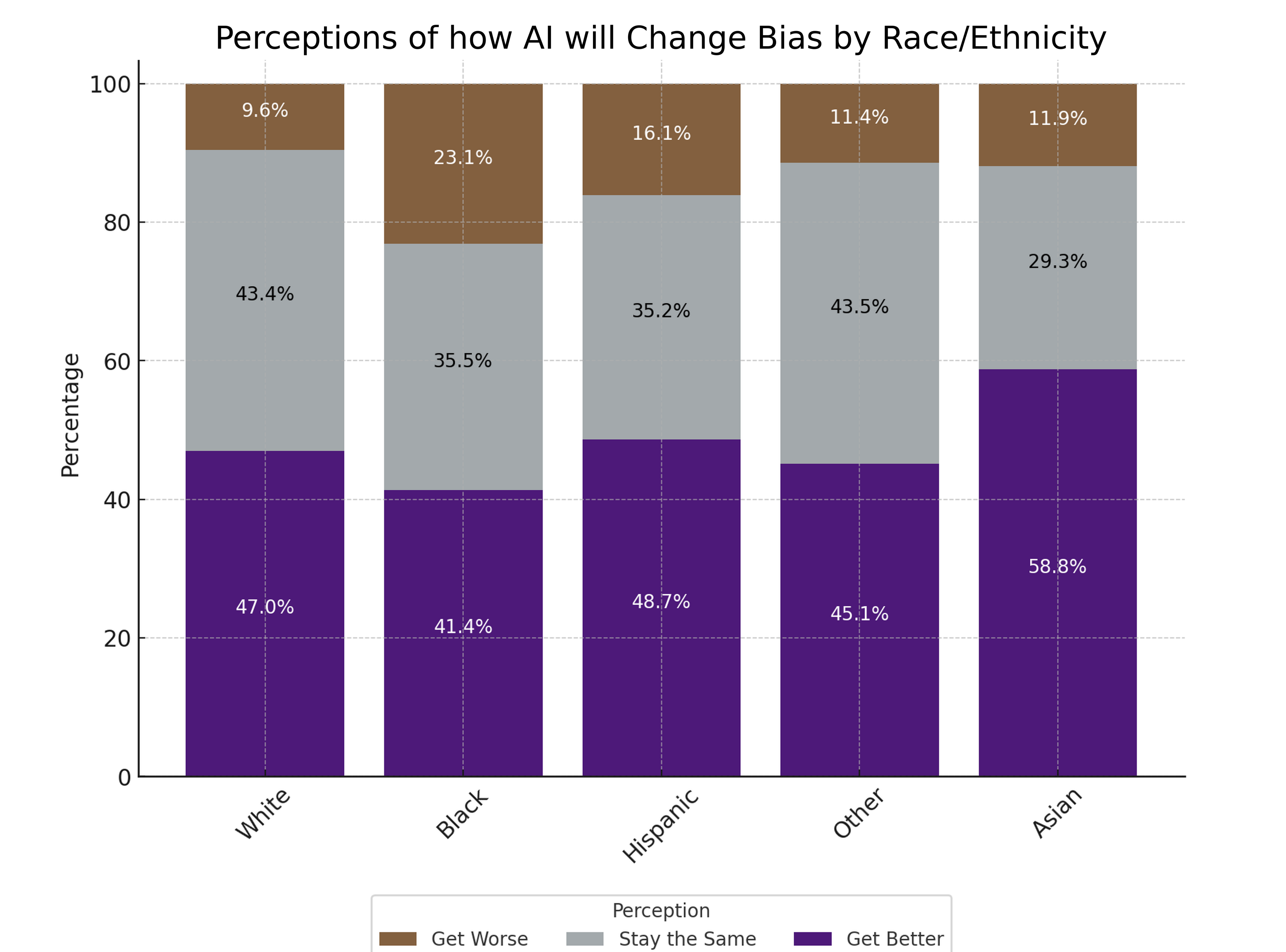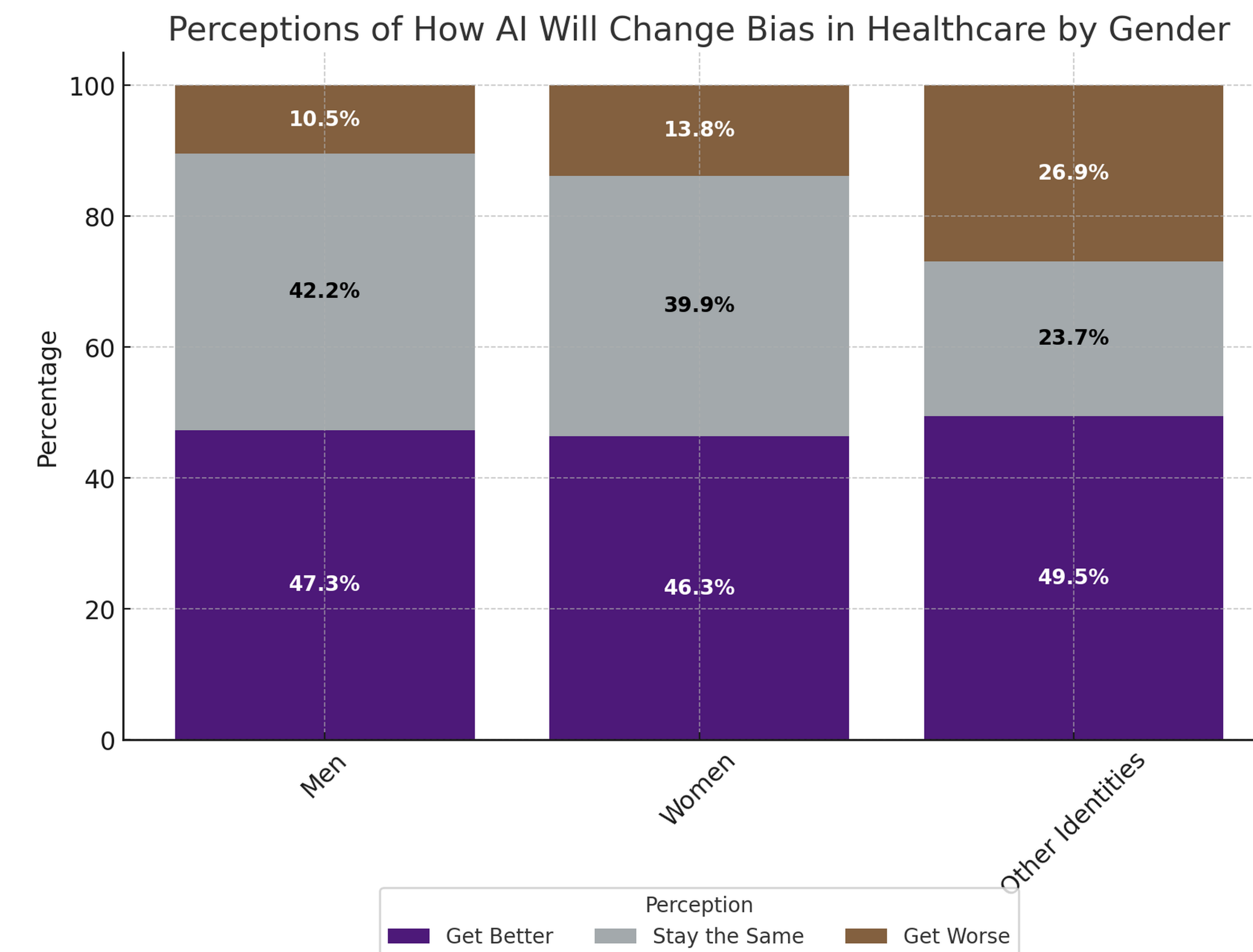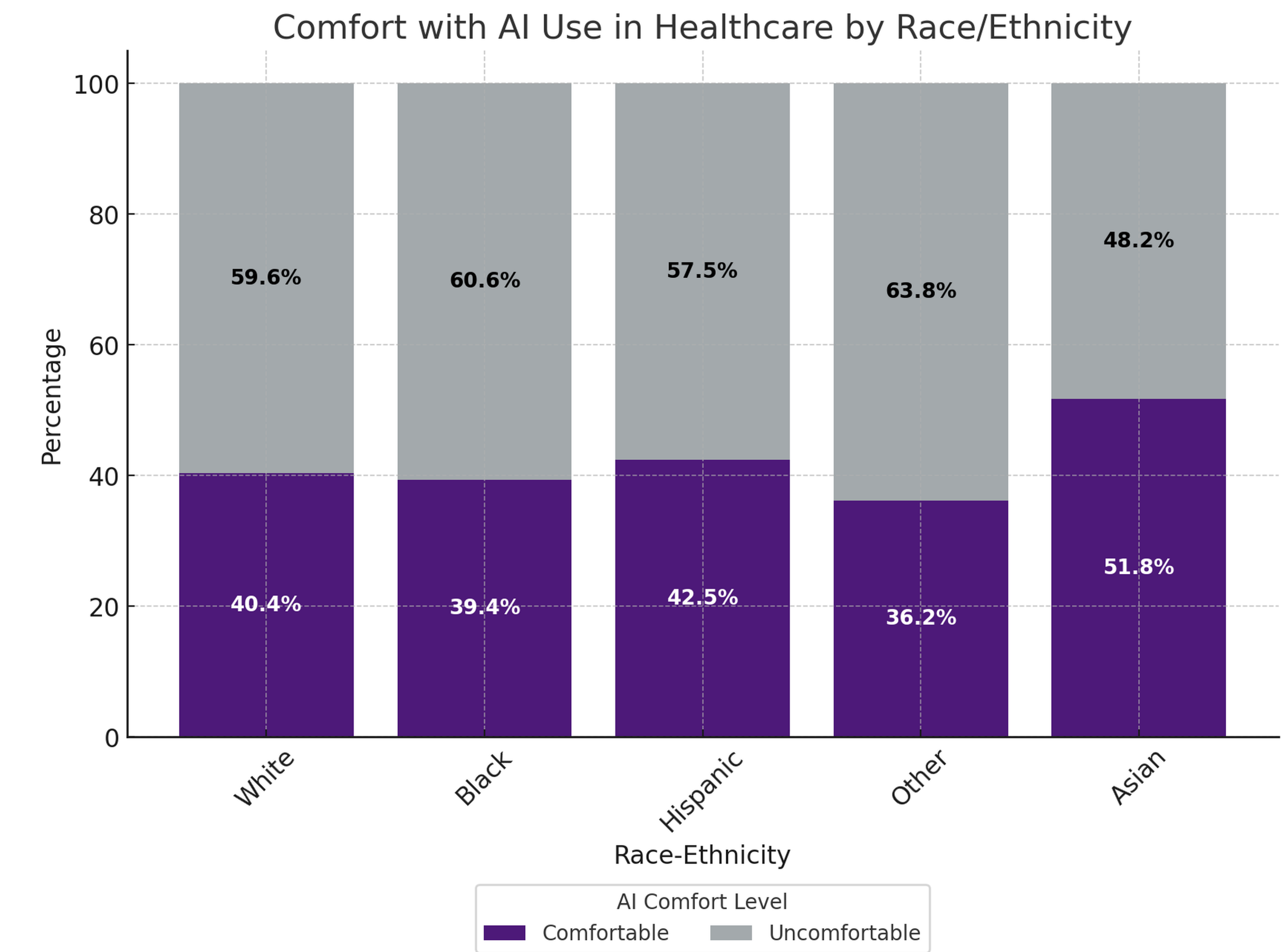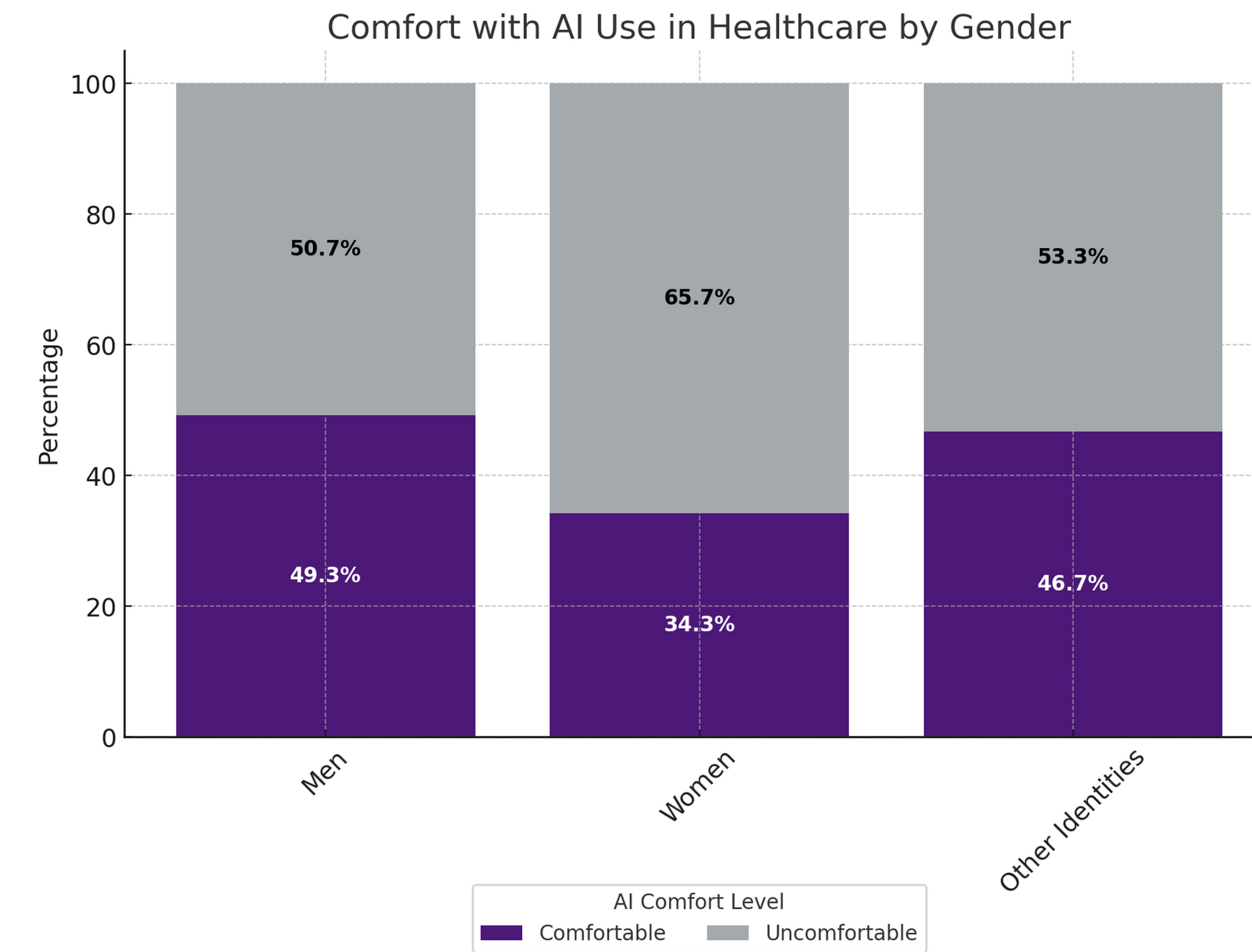
Data Source

∗ The data for this study comes from the Pew Research Center's American Trends Panel (ATP) Wave 119, a nationally representative survey of U.S. adults conducted online from December 12 to December 18, 2022. https://www.pewresearch.org/dataset/american-trends-panel-wave-119/

∗ A total of 11,004 respondents completed the survey, with a response rate of 88%. After dropping missing cases, we have a total sample size of 10,683. Respondents were recruited through a mix of random-digit dialing (RDD) and address-based sampling (ABS) from the U.S. Postal Service's Delivery Sequence File.

Analysis

∗ All analyses conducted using STATA 18.

∗ Descriptive Statistics: Characterized respondent demographics and baseline attitudes toward AI.

∗ Logistic Regression: Assessed factors influencing comfort levels with AI in healthcare settings.

∗ Ordered Logistic Regression: Analyzed beliefs about AI's potential to exacerbate or reduce bias.

Results

Comfort with AI Use in Healthcare by Gender

Comfort with AI Use in Healthcare by Race/Ethnicity

Perceptions of How AI Will Change Bias in Healthcare by Gender

Perceptions of how AI will Change Bias by Race/Ethnicity

Discussion & Conclusions

∗ Trust in AI is not universal—comfort and belief in fairness differ across groups.

∗ Education, transparency, and inclusive design are essential for equitable AI integration in medicine.

∗ Addressing disparities in perception is critical to prevent AI from reinforcing existing healthcare inequities.

Future Research

∗ Auditing and accounting of current training data for bias, either implicit or due to selection bias.

∗ Longitudinal impact of AI on workers, patients, and the industry as a whole over time.

∗ Investigation into AI recognition of race from medical imaging vs. ancestry.