

The Effects of Humanizing Health Algorithms on Judgments and Belief

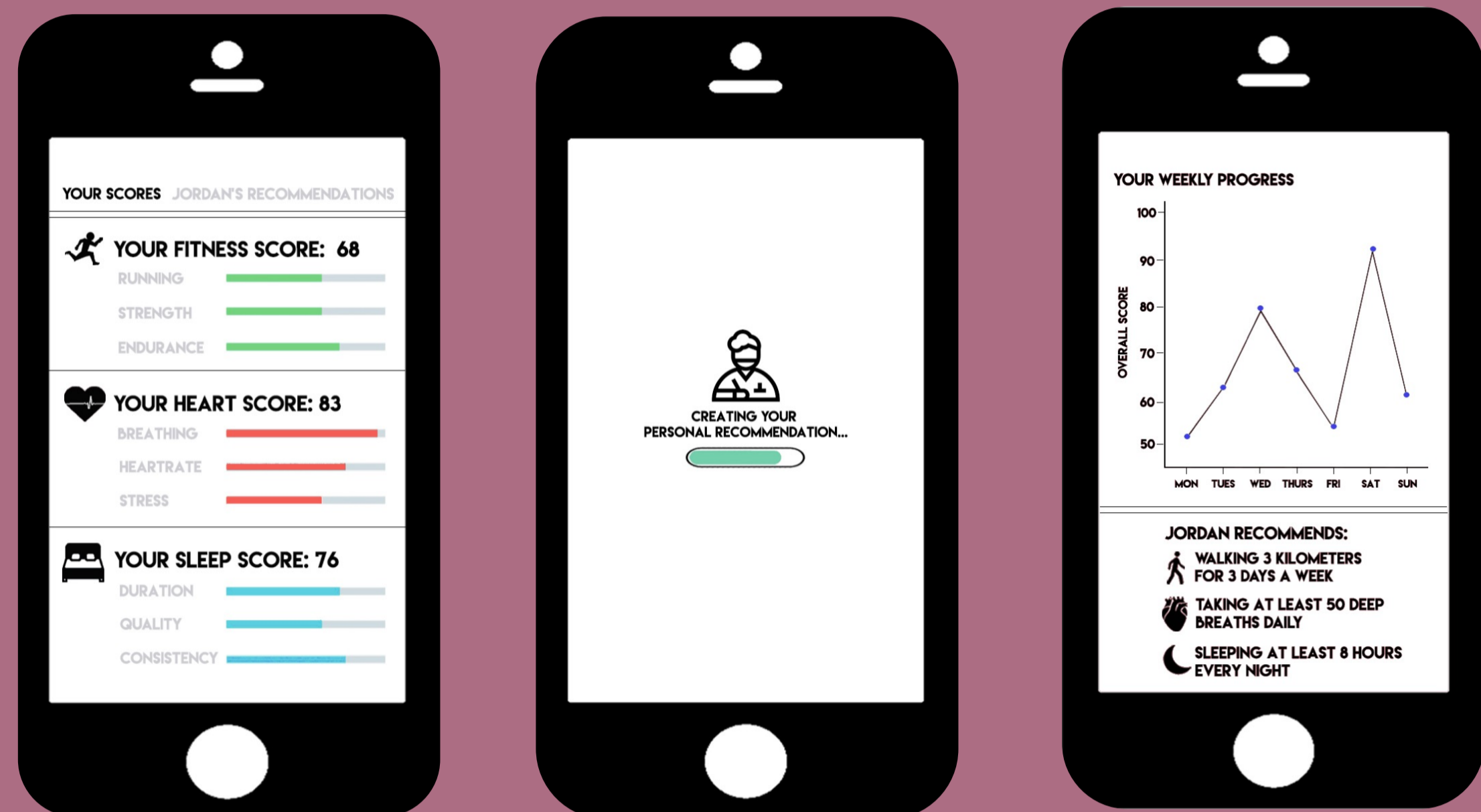
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Background

Digital health is an emerging field utilizing algorithms to track and make health, mental well-being, and fitness recommendations. One concern is that algorithmic recommendations can be more influential on people's judgments than recommendations by other people (Dietvorst et al., 2015; Logg et al., 2019; Prah & Van Swol, 2017). However, no previous research has examined this difference in the domain of health recommendations. As algorithms increasingly become involved in health, there is a need to understand how perceptions of health recommendations change when people are given information by certain types of algorithms and how this may subsequently affect future health behavior.

STUDY 1



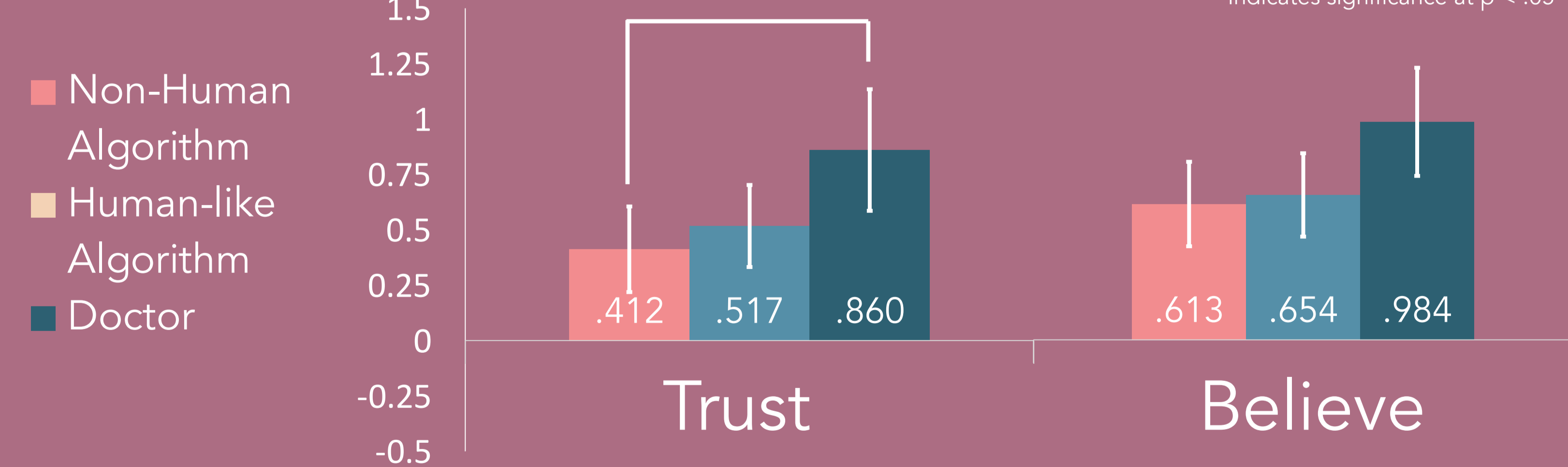
Research Question

1. Do people trust and believe health recommendations given by a doctor more or less than those given by an algorithm?
2. Does humanizing an algorithm affect how much people trust and believe health recommendations?

Method

We conducted a randomized between-subjects study (n = 609), where participants read a vignette about the process of making a health recommendation from one of three different sources: an algorithm, a human-like algorithm, and a doctor. We then asked participants how much they trust the recommendation (Completely distrust[-3] – Complete trust[3]) and how much they believe the health recommendation would improve health (Completely disbelieve[-3] – Complete believe[3]).

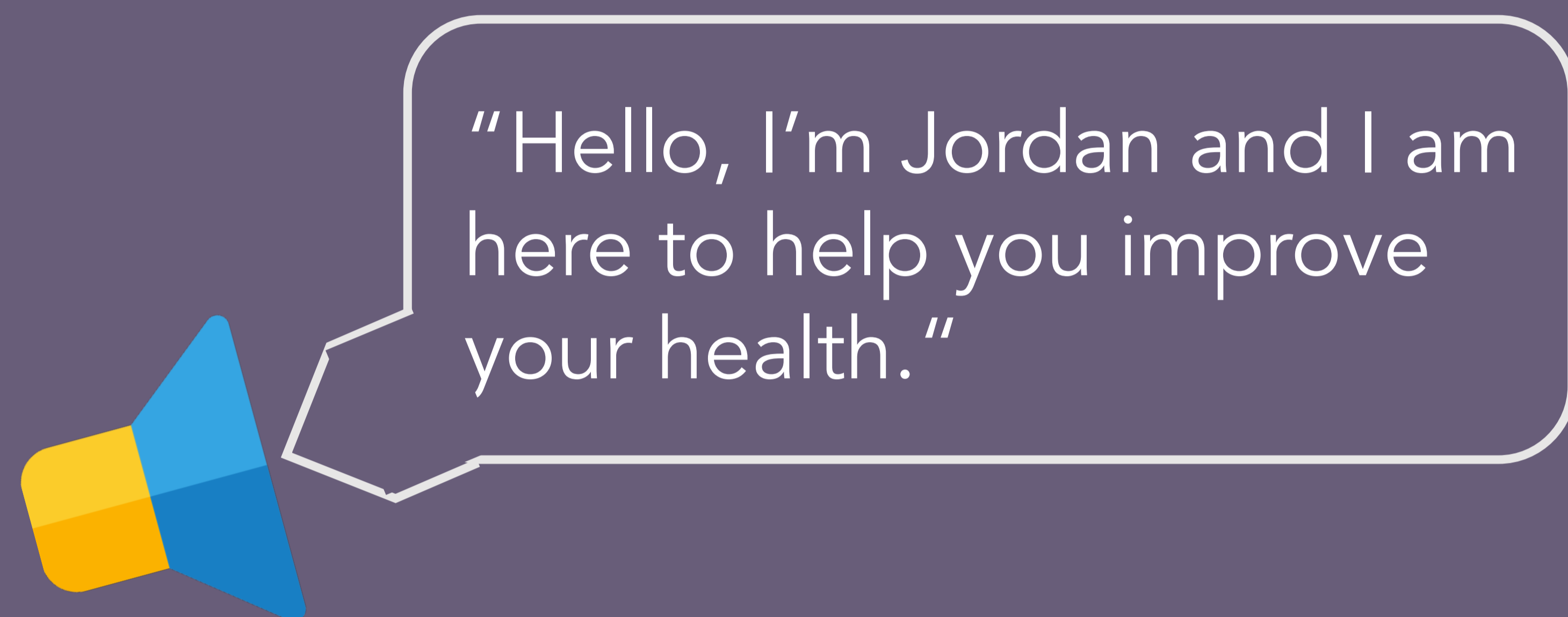
Results



Discussion

We did not find the expected effect based on Dietvorst et al. (2015) and Logg et al. (2019). Instead, our effect trended in the opposite direction, with participants significantly trusting the doctor more than the non-humanized algorithm. We did not find a significant difference between the humanized and non-humanized algorithms; as such, we opted to strengthen the humanizing manipulation in Study 2.

STUDY 2



To increase the strength of our humanization manipulation, we added a voice to all three conditions.

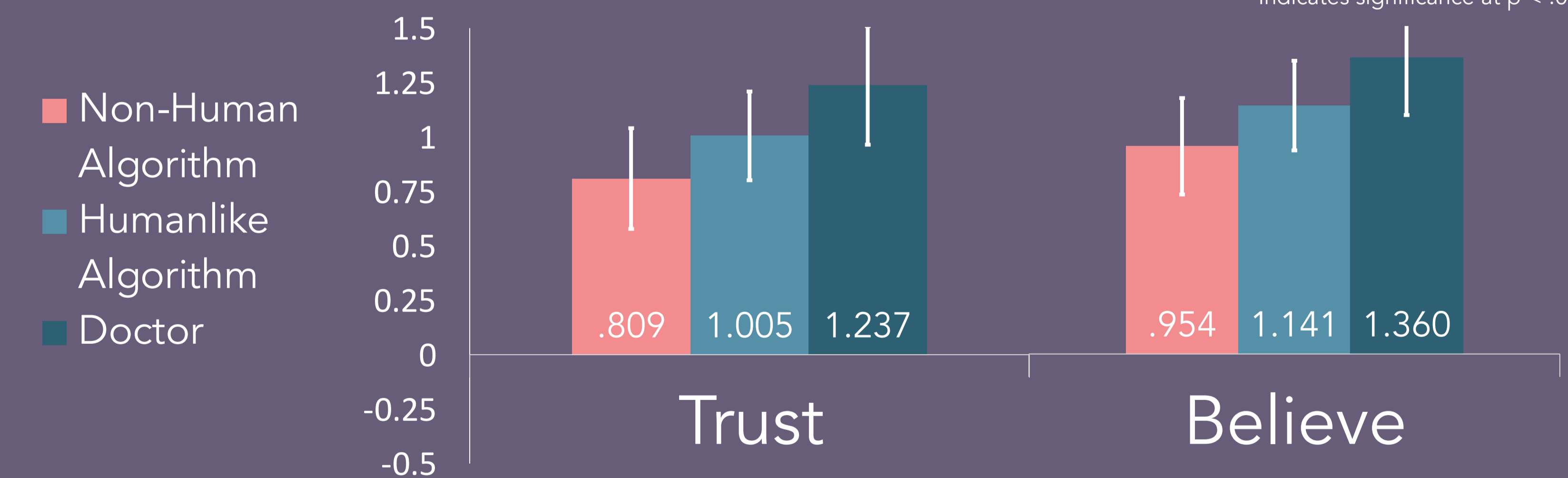
Research Questions

1. Do people trust and believe health recommendations given by a doctor more or less than those given by an algorithm?
2. Does humanizing an algorithm affect how much people trust and believe health recommendations?

Method

Using the same methodology as Study 1, in Study 2 (n=471), we added a recording with the recommender giving a vocalized recommendation. We used the same human unfiltered voice for the doctor and humanized algorithm conditions. For the non-humanized algorithm condition, we used a more synthetic voice.

Results



Discussion

We found the same pattern of results as in Study 1, but we found no significant differences between conditions. Our null findings may result from a lack of power to detect small differences in how much people believe or trust medical recommendations. Our results may also differ from previous literature because trust in health recommendations may differ from trust in decision-making about hiring. In addition, how much people trust and believe medical recommendations may not be the same as how people's own judgements may be influenced by such recommendations.

Next Steps



Judgments

Research Question

1. How does the health information source affect people's willingness to change their judgments about health when given by an algorithm or a doctor?
2. Does humanizing an algorithm affect people's willingness to change their judgments about health?

Method

This study will be a randomized between-subjects experiment where participants are presented with the health background of a fictional person and told to make health and fitness recommendations for that person (e.g., amount of daily sleep and exercise). The participant will then be presented by a doctor's or an algorithm's recommendation and subsequently permitted to change their initial judgment. We will measure participants' willingness to change their initial judgment to match the recommendation.



Behavior

Research Question

1. How does health behavior change based on the recommendation of a humanized versus non-humanized algorithm?

Method

This study will be a randomized between-subjects experiment where college students track their exercise, sleep, and eating habits for a week and then receive health recommendations by an algorithm. The participants will then follow their health and fitness for another week, reporting their health and fitness information daily. We will measure people's adherence to the recommendation during the second week.

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