# Understanding Patient Attitudes to AI: Results from an 18-Item Questionnaire

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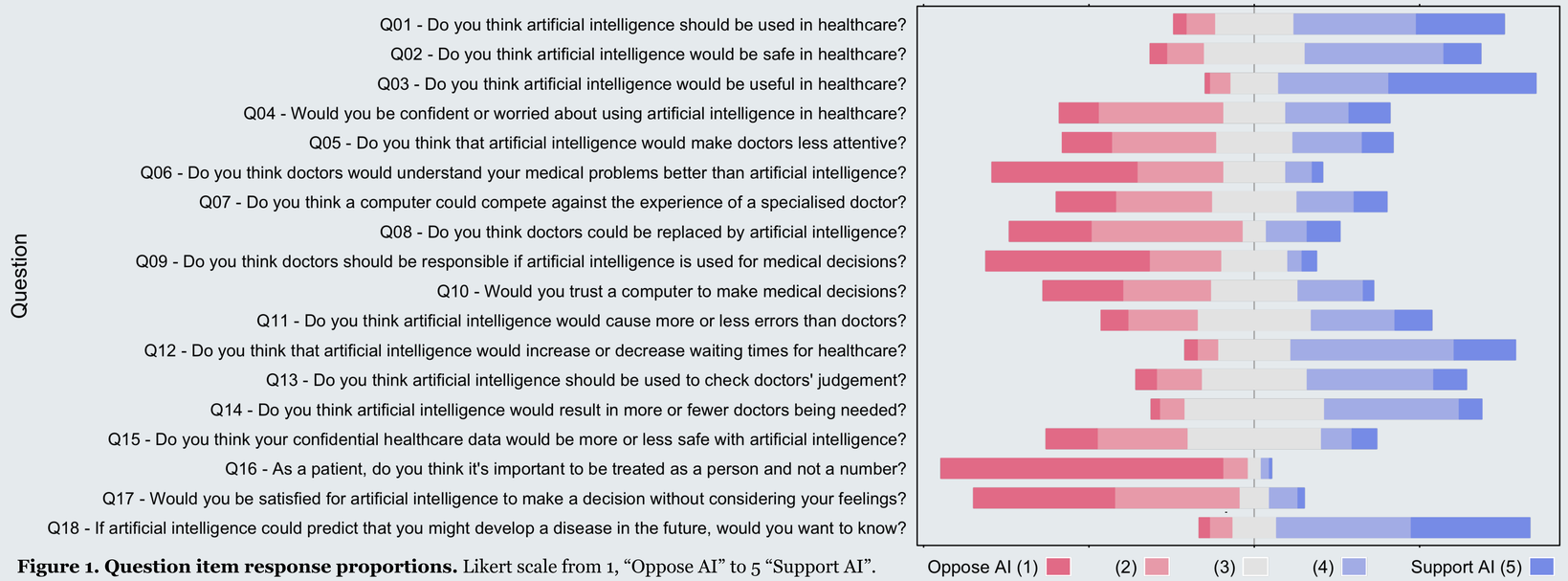



**Figure 1. Question item response proportions.** Likert scale from 1, "Oppose AI" to 5 "Support AI".

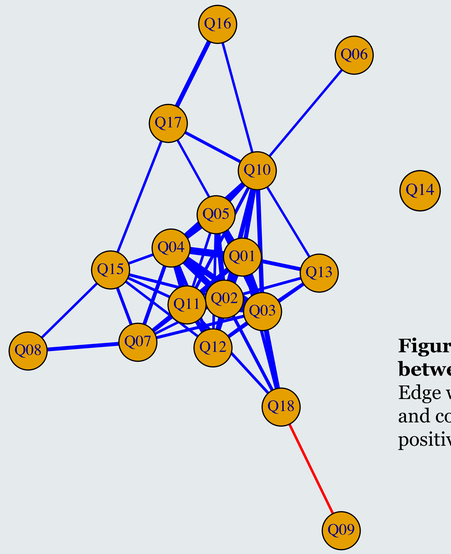



**Figure 2. Kendall correlation between question items.** Edge weight denotes correlation size and colour denotes direction (blue: positive, red: negative)

## Introduction

AI adoption in healthcare is growing, driven by workforce challenges and investments like the UK government's £21 million for diagnostic AI in radiology. However, barriers such as data privacy concerns, workflow misalignment, and public trust remain significant [1]. Studies show limited enthusiasm for diagnostic AI in Europe, with a preference for human interaction. Gaining public support for AI tools requires a clear understanding of current attitudes and priorities, and the "facilitating conditions" [2].

## Goal

To explore current attitudes to AI, we surveyed patients attending for diagnostic imaging.

## Methods

In this prospective study, an 18-item attitudes to AI questionnaire with a 5-level Likert scale was developed and administered to consenting patients attending for outpatient imaging.

To identify patterns of responses, metrics were calculated for each question item: support, opposition, uncertainty, and bidirectional polarisation. Uncertainty was the proportion of response with Likert level 3. Bidirectional polarisation was the product of Likert levels 1 and 5.

Correlation between question items was calculated and p values were adjusted for multiple comparisons using the Benjamini-Hochberg method. Correlation structure is presented on a graph, with edges representing correlations greater than 0.2, and adjusted p value < 0.05.

## Results

162 people completed the questionnaire (56% female). The modal age groups were "30 to 49" (35.4%) and "50 to 69" years old (35.4%). The Likert response proportions for each question item are shown in Fig. 1.

**Support** for AI was strongest in Q03 ("Do you think artificial intelligence would be useful in healthcare?"), Q18 ("If artificial intelligence could predict that you might develop a disease in the future, would you want to know?"), and Q12 ("Do you think that artificial intelligence would increase or decrease waiting times for healthcare?").

**Opposition** to AI was revealed in Q16 ("As a patient, do you think it's important to be treated as a person and not a number?"), Q09 ("Do you think doctors should be responsible if artificial intelligence is used for medical decisions?"), and Q17 ("Would you be satisfied for artificial intelligence to make a decision without considering your feelings?").

**Uncertainty** was highest for Q14 ("Do you think artificial intelligence would result in more or fewer doctors being needed?"), Q15 ("Do you think your confidential healthcare data would be more or less safe with artificial intelligence?"), and Q11 ("Do you think artificial intelligence would cause more or less errors than doctors?").

**Polarisation** in responses was found for Q08 ("Do you think doctors could be replaced by artificial intelligence?"), Q09 ("Do you think doctors should be responsible if artificial intelligence is used for medical decisions?"), and Q07 ("Do you think a computer could compete against the experience of a specialised doctor?").

There were significant correlations between question items (Fig. 2). The strongest were between question pairs: (Q01, Q02), (Q01, Q03), and (Q01, Q04).

## Discussion

Patients were generally positive about AI but have serious reservations around loss of human input into healthcare decisions. Polarised attitudes were present, including whether AI can rival a doctor's expertise, and whether AI could replace doctors.

This study provides insights into current patient attitudes to AI in healthcare, extending prior surveys from Europe, which have found a generally negative attitude to AI, particularly in areas of "trust" and "accountability" [3]. Previous work has found patient concerns around the effect of AI on the "human dimension of care".

## Conclusions

Patients expect AI to be useful but are concerned about a negative impact on the human dimension of care. The results of this study should guide ongoing AI implementation and enable future re-assessment of public attitudes to AI, in a shifting landscape.

## References

1. Petersson et al. (2022) doi: 10.1186/s12913-022-08215-8
2. Venkatesh et al. (2003) doi: 10.2307/30036540
3. Ongena et al. (2020) doi: 10.1007/s00330-019-06486-0