PUBLIC PERCEPTIONS OF AI IN MEDICINE

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BACKGROUND

- There is extensive and growing number of suggested uses of artificial intelligence (AI) in medicine
- The use of AI may have a significant impact on how patients understand and feel about their care
- Patients may be sensitive to how such technology is framed and may adjust their perception of risk based on such framing
- Understanding the general public's views and comprehension of technology such as robotics and AI in medical applications is important to ensure acceptability, quality of counseling and guide future development

SUBJECTS AND METHODS

- A survey was conducted on a convenience sample of 264 visitors to the MN state fair
- Demographic information such as gender, age, and zip code were collected
- Four sections of the survey investigated participant beliefs on the capabilities of AI and robotics and their comfort with such technology used in diagnosis and treatment of medical conditions.
- Participants were randomized to receive one of two similar surveys in order to compare confidence in human and computer-based diagnosis:
  - Diagnosis was made by a physician
  - Diagnosis was made by an AI application

DEMOGRAPHIC RESULTS

- Median age for participants was 45 (IQR 28-59)
- 58% were female
- 69% had completed at least a bachelor's degree
- 88% were Caucasian vs. 12% ethnic minorities
- 12 different states were represented with a majority from the Upper Midwest

SURVEY RESULTS

- Given the same scenario with a recommendation given by a doctor vs an AI, there was not evidence to show a significant difference in the proportion of those who wished to seek a second opinion. (56% vs 67%)
- Though half of respondents (n=145) reported they were uncomfortable with automated robotic surgery, the majority of the individuals surveyed (88%) mistakenly believed that the robot was acting in a partially autonomous manner
- The demographics of people who were more comfortable with robotic surgery - male, younger, higher income neighborhoods
- Most respondents (94%) stated they would be willing to pay for a second opinion/interpretation of medical imaging by AI if available (n=249)

SURVEY RESULTS

- When given the scenario where an AI and Doctor disagree on the likelihood of cancer (AI low probability, Doctor higher probability) and asked which they trusted more, the version of the survey that they had received was highly significant
- Those that had the survey that suggested an AI application making a diagnosis were more likely to choose the AI
- Both results lead us to believe that opinions about AI in medicine are highly malleable

CONCLUSIONS

- Most participants express confidence in AI providing medical diagnoses, sometimes even trusting AI over human physicians
- Participants expressed more concern of autonomously acting robotic surgery, but mistakenly believe it is already happening
- As AI applications make their way into medical practice, health care providers should be responsive to the potential amount of misinformation and sensitivity individuals feel to how such technology is represented