

Self-triage capabilities of laypersons: Implications for use cases of decision support systems

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Introduction

Emergency department overcrowding

- High workload¹
- Worse patient outcomes²

→ Triage (allocating resources based on case urgency)

Triage errors

- In 16% of all cases³
- Self-assessment of patients prior to visiting a healthcare facility

Related work

Laypersons' capabilities

- Tend to overtriage⁴
- Females seem to be more risk-averse⁵

Symptom checkers

- Aid laypersons in deciding where and how urgently to seek care
 - Are risk-averse⁶
- Can laypersons judge when they would profit from decision support?

Methods

Participants

- 91 US-residents
- 45 case vignettes → 4095 appraisals
- Age: Mdn = 37, Range: 20-73
- Female: 36 (40%), Male: 55 (60%)

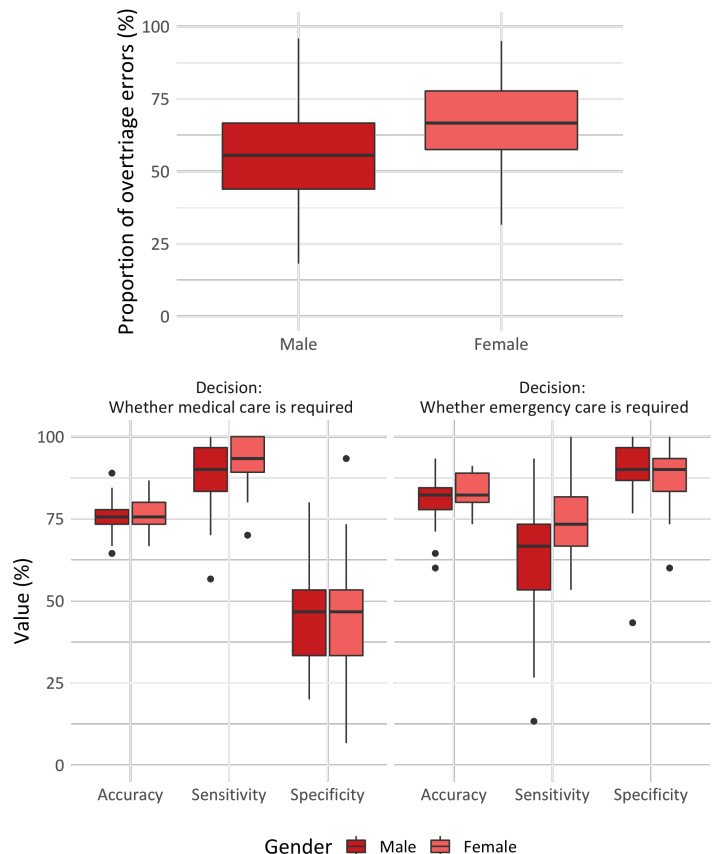
Design and measures

- Retrospective exploratory analysis
- Urgency rating of case vignettes & certainty
 - Emergency, Non-Emergency, Self-care
 - 4 pt. Likert scale

Analysis

- Dichotomization of triage levels:
 - Decision 1: Is medical care even required?
 - Decision 2: Is emergency care required?
- Linear models, summary statistics and visualization

Results



Degree of certainty	Triage assessment		Total	Accuracy
	Correct	Incorrect		
Uncertain	378	336	714	52.9%
Certain	2114	1267	3381	62.5%
Total	3381	1603	4095	60.8%
Proportion certain	87.0%	79.0%		

Discussion

General

- Most laypersons correctly identify when to seek medical care, but struggle identifying no-care cases
- They are better at ruling out non-emergency cases than detecting emergencies
- Participants uncertain about their appraisal were more likely to err
- Most errors occurred in appraisals of which participants were certain

Limitations

- Results not applicable to healthcare systems outside the US
- Certainty as a proxy for seeking symptom checker advice
- Exploratory analysis, randomized controlled trial needed

Implications

- Symptom checkers should assist all users independent of their self-perceived competencies
- Help identifying
 - No-care cases
 - Emergencies that require immediate medical attention

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