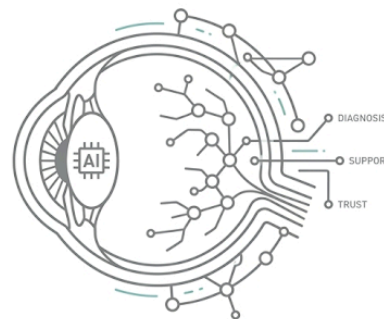


Patient Perspectives on Artificial Intelligence in Ophthalmology: Insights from a UK Eye Department

As artificial intelligence redefines the frontiers of ophthalmic diagnostics, the success of its integration rests not just on technical precision, but on patient trust and ethical clarity. This study captures the vital voice of the UK outpatient, bridging the gap between clinical innovation and the lived experience of those it aims to serve.

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01 Introduction

- Artificial Intelligence (AI) is increasingly used in ophthalmology for disease detection and diagnostic support.
- Patient perspectives are key to ensuring safe, ethical, and acceptable implementation of AI in clinical care.
- Limited evidence exists on how UK ophthalmology patients perceive AI use in eye care.
- This study explores awareness, trust, willingness, and concerns regarding AI-assisted care among ophthalmology outpatients.

02 Objectives

- To assess patient awareness and attitudes towards AI in ophthalmology.
- To identify levels of trust and willingness to accept AI involvement in care.
- To explore key patient concerns and factors influencing confidence in AI.

03 Methodology

- Study Design & Setting This study employed a cross-sectional questionnaire design, conducted within the outpatient clinics of a single ophthalmology department in the UK.
- Participants We recruited adults (aged 18 years or older) capable of completing the survey independently. To ensure data integrity and autonomous participation, individuals requiring translation services or those lacking decision-making capacity were excluded.
- Data Collection Recruitment followed a consecutive sampling method across both general and subspecialty clinics. Participants completed digital questionnaires on tablet devices, with two trained medical students available to provide technical support and facilitate the process.
- Survey Content The questionnaire was adapted from validated literature to evaluate five key domains:
 - a. Patient demographics
 - b. AI awareness
 - c. Institutional trust
 - d. Willingness to engage with AI-assisted care
 - e. Specific patient concerns
- Data Analysis Quantitative data were analyzed using descriptive statistics, while qualitative insights from free-text responses were synthesized through thematic analysis.

04 Results

- Participant Demographics**
The study included a total of 100 participants, maintaining a balanced gender distribution of 50 men and 50 women. The cohort represented a wide demographic span, with a mean age of 49.4 years and ages ranging from 18 to 90 years
- Awareness and Willingness**
- Low Baseline Awareness: Only 9% of participants were aware that AI is currently utilised within the field of ophthalmology.
 - General Willingness: Despite low awareness, most patients were open to AI-assisted diagnostics. Specifically, 67% reported being "willing" and 24% "very willing" to undergo such tests , while 8% remained neutral.
 - Human-Centric Preference: A significant majority (79%) preferred that AI function as a supportive tool for doctors rather than an autonomous system making independent clinical decisions.
- Qualitative Key Themes**
Analysis of free-text responses identified three primary areas of focus regarding the integration of AI in clinical care:
- Verification and Oversight: Participants emphasized a critical need for human oversight, insisting that clinicians must verify AI results to ensure safety.
 - Data Integrity: Data security and transparency were highlighted as frequent concerns, suggesting that trust is closely linked to how personal information is handled.
 - Augmentation vs. Replacement: The prevailing sentiment was a preference for AI as a supportive instrument to enhance care, rather than a replacement for the clinician-patient relationship.

05 Discussion / Conclusion

Despite a 91% willingness to undergo AI-assisted tests , only 9% of patients were aware AI is currently used in ophthalmology in some fields. This gap highlights the need for clear guidelines prioritising human oversight, as 79% of participants preferred AI as a supportive tool for doctors rather than an independent decision-maker. Future regulations must address transparency and data security to maintain the high levels of trust essential for clinical adoption.

To bridge this gap, we propose integrating safety features, such as a "Confirm and Discuss AI Findings with Patient" prompt, into clinical software to ensure clinicians remain central to the diagnostic process. This directly addresses patient demand for human verification and oversight. As a next step, we will evaluate this proposed intervention by gathering feedback from both patients and doctors to ensure it supports safe, ethical, and patient-centred AI implementation in eye care.

IMPORTANT!
Confirm and Discuss AI Findings with Patient

How willing would you be to undergo a diagnostic test if it was assisted by A.I.?

