

Assessing knowledge, attitudes, trust, perceived usefulness, and barriers to using artificial intelligence (AI) in gastroenterology among clinicians and patients.

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-Introduction

Innovative technological developments in medical image interpretation, diagnostic support, risk assessment for different illnesses, outcome prognostication, and, in some cases, treatment recommendation have all been made possible by artificial intelligence (AI) (*Goh et. al., 2024*).

The number of machine learning and artificial intelligence (AI) applications intended to enhance the caliber, efficacy, and efficiency of our clinical practice has increased dramatically in gastroenterology over the last 10 years.

(*Leggett et. al., 2024*).

Research on clinicians' acceptance and confidence in AI is becoming more and more crucial. This is due to the perception that healthcare workflow integration requires trust and acceptance of AI technology. Numerous studies have already shown that trust is one of the key factors influencing the use of AI in healthcare. Although there is growing clinical evidence of AI's accuracy in diagnosis and prognosis, more focus needs to be placed on physicians' level of acceptance and trust (*Goh et. al., 2024*).

More and more patients want to take a more active role in their medical care. As a result, patients' usage of digital health care tools—both online and mobile—has skyrocketed. As of right now, it's unclear if people use symptom checkers to enhance medical guidance or if they use them to replace in-person medical care by only seeking it when directed by AI (*Meyer et. al., 2022*).

-Aim of the work:

Primary: To measure knowledge, attitudes, trust, perceived usefulness, risk perception, and willingness to use AI in gastroenterology among (a) gastroenterology clinicians and (b) GI patients.

Secondary:

- To compare perspectives between clinicians and patients.
- To explore factors associated with higher acceptance/trust (age, prior AI exposure, digital literacy, years of practice).

Patient and Methods:

We will conduct a cross-sectional study. We will conduct a survey using a structured questionnaire for two parallel target populations: clinicians and patients. The questionnaire will be created by a multidisciplinary team (authors) with expertise in patient experience, cognitive psychology, psychometrics, internal medicine, and diagnostic errors. Items in the questionnaire for testing risk perception, acceptance, and trust were adapted from various other studies [*Hah et. al., 2021; Kader et. al., 2022; Goh et. al., 2024*]

- Participants

- Clinicians: - practicing gastroenterologists.
-Ability and willingness to sign the consent form
- Patients:
Inclusion: -adult patients (≥ 18) attending GI clinics/units (inpatient or outpatient), cognitively able to complete questionnaire
-Ability and willingness to sign the consent form

- Ethical consideration:

- The study will be approved by the local ethical committee.
- Informed consent will be obtained from patients.
- voluntary participation, confidentiality, right to withdraw.

Questionnaire Development

1. **Item generation:** Based on literature and brief interviews with 8–10 clinicians and 8–10 patients.
2. **Content validity:** Review by a small expert panel (3–5 experts).
3. **Cognitive testing:** 10–15 participants from each group to ensure clarity and comprehension.
4. **Pilot testing:** Small sample (clinicians: ~50; patients: ~100) to refine items.

-Questionnaire Domains

- Demographics
- Knowledge (self-rated $\pm$ short objective items)
- Attitudes toward AI in GI
- Trust & risk perception
- Perceived usefulness
- Willingness to use AI
- Barriers & facilitators

-Data Collection:

Clinicians: Online survey (Google Forms).

Patients: Paper or tablet-based survey in clinics.

Consent obtained before participation; responses are anonymous.

Statistical analysis:

Statistical analysis will be conducted by SPSS. Parametric data will be expressed as mean $\pm$ standard deviation (SD), such as age, and will be evaluated

statistically by means of Student t-test, while non-parametric data will be expressed as proportions, like male and female, and will be analyzed using chi-square. A p-value < 0.05 will be considered significant.

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