Official Study Title:

Human Doctors or AI? Evaluating Patient Satisfaction in Urinary Stone Disease Consultations

Study Protocol

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Human Doctors or AI? Evaluating Patient Satisfaction in Urinary Stone Disease Consultations

Study Design:

This is a randomized, parallel-assignment, open-label interventional study. Participants with urinary stone disease will be randomly assigned to one of five consultation groups:

1. In-person consultation with a real urologist
2. Online consultation with ChatGPT
3. Online consultation with Gemini
4. Online consultation with Perplexity
5. Online consultation with Microsoft Copilot

All groups will receive counseling on the same clinical condition (urinary stone disease), and patient satisfaction will be evaluated using the Client Satisfaction Questionnaire (CSQ-8).

Study Objectives:

Primary Objective:

To compare patient satisfaction after consultation with a real doctor versus various AI chatbots.

Secondary Objectives:

- To compare consultation durations across groups
- To assess completion rates of the satisfaction survey
- To explore potential demographic factors influencing satisfaction

Eligibility Criteria:

- Age ≥ 18 years
- Diagnosis or suspicion of urinary stone disease
- Voluntary consent to participate
- Able to complete the CSQ-8 questionnaire
- Exclusion: cognitive impairment, language barrier, or prior use of AI tools for this condition

Sample Size:

A total of 100 participants (n=20 per group) is planned, based on feasibility. Given the exploratory nature of the study, formal power analysis was not performed. This sample allows for initial comparison of satisfaction scores between groups using nonparametric methods.

Randomization and Allocation:

Participants will be randomly assigned in one of the five consultation arms.. Randomization will be performed by an independent researcher not involved in data collection.

Blinding:

Open-label design. Both participants and investigators will be aware of the consultation source.

Intervention Description:

Participants will receive consultation about urinary stone disease from either a real doctor or one of the AI chatbots. They are allowed to ask as many questions as needed until they feel fully informed. The session duration will be recorded. Afterward, participants will complete the CSQ-8 to evaluate satisfaction.

Data Collection:

- Sociodemographic form: Age, sex, education level
- Consultation duration: Measured in minutes
- Satisfaction: CSQ-8 questionnaire (score range: 8–32)