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The impact of ChatGPT on preoperative anxiety and postoperative depression in cesarean section

Submission date	Recruitment status	[_] Prospectively registered
17/03/2026	No longer recruiting	[X] Protocol
Registration date	**Overall study status**	[_] Statistical analysis plan
18/03/2026	Completed	[_] Results
Last Edited	**Condition category**	[_] Individual participant data
18/03/2026	Pregnancy and Childbirth	[X] Record updated in last year

Plain English summary of protocol

Background and study aims
This study aims to evaluate whether using ChatGPT as an additional source of information can reduce anxiety before cesarean section and depression after delivery. The findings of this study may help improve patient education and emotional well-being in women undergoing cesarean section.

Who can participate?
Adult pregnant women aged ≥18 years who are scheduled for cesarean section.

What does the study involve?
Women scheduled for cesarean section were randomly assigned to two groups. One group received standard information from their doctor, while the other group received both standard information and additional support using ChatGPT. Participants were able to ask questions and receive detailed explanations through ChatGPT.

The study measured anxiety levels before the operation and depression levels after delivery using validated questionnaires. Pain levels after the procedure were also evaluated.

What are the possible benefits and risks of participating?
Benefits and risks not provided at time of registration

Where is the study run from?
Ankara Atatürk Sanatoryum Research and Training Hospital, Turkey.

When is the study starting and how long is it expected to run for?
September 2023 to December 2024.

Who is funding the study?
Investigator initiated and funded.

Who is the main contact?
Dr Bengü Mutlu Sütcüoğlu, bengu.sutcuoglu@saglik.gov.tr, drbengumutlu@gmail.com

Contact information

Type(s)
Principal investigator, Scientific, Public

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Additional identifiers

Study information

Scientific Title
A prospective randomized controlled trial evaluating the impact of ChatGPT-supported patient education on preoperative anxiety and postoperative depression in women undergoing cesarean section

Acronym
CHAT-CES Study

Study objectives
The primary objective of this study is to evaluate the effect of ChatGPT-supported patient education on preoperative anxiety in women undergoing cesarean section.

Secondary objectives include assessing the impact of this intervention on postoperative depression levels and postoperative pain scores.

Ethics approval required
Ethics approval required

Ethics approval(s)
approved 20/09/2023, Lokman Hekim University Scientific Research Ethics Committee (Lokman Hekim Üniversitesi Bilimsel Araştırmalar Etik Kurulu) (Söğütözü Neighborhood, 9 Eylül Street No 6, Ankara, 06150, Türkiye; +90 312 444 8 548; info@lokmanhekim.edu.tr), ref: 2023158

Primary study design
Interventional

Allocation
Randomized controlled trial

Masking
Open (masking not used)

Control
Active

Assignment
Parallel

Purpose
Supportive care

Study type(s)

Health condition(s) or problem(s) studied
Preoperative anxiety and postoperative depression in women undergoing cesarean section

Interventions
Participants were randomly assigned in a 1:1 ratio using a computer-generated randomization sequence to either the intervention group or the control group. Allocation was implemented using sealed, opaque envelopes prepared prior to study initiation.

Intervention group: Participants received standard physician consultation along with additional support using ChatGPT. ChatGPT was used to provide individualized, accessible, and interactive information regarding the cesarean section procedure, including preoperative preparation, intraoperative expectations, and postoperative care. Participants were able to interact with ChatGPT to ask questions and receive real-time responses.

Control group: Participants received standard physician consultation only, which included routine preoperative information provided by healthcare professionals.
All participants were assessed for preoperative anxiety using the State-Trait Anxiety Inventory (STAI) prior to the procedure. Postoperative depression was evaluated using the Edinburgh Postnatal Depression Scale (EPDS), and postoperative pain was assessed using a standardized pain scale.

Intervention Type
Behavioural

Primary outcome(s)
1. Preoperative anxiety measured using State-Trait Anxiety Inventory (STAI) and state anxiety subscale (STAI-I) at immediately before cesarean section and after the intervention

Key secondary outcome(s)

Completion date

10/12/2024

Eligibility

Key inclusion criteria
1. Pregnant women scheduled for cesarean section
2. Age ≥18 years
3. Ability to understand and communicate in Turkish
4. Ability to use a smartphone or digital device
5. Willingness to provide informed consent

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Upper age limit
50 years

Sex
Female

Total final enrolment
300

Key exclusion criteria
1. Women with a history of psychiatric disorders or current psychiatric treatment
2. Inability to understand or communicate in turkish
3. Inability to use a smartphone or digital device
4. Refusal to provide informed consent
5. Emergency cesarean section

Date of first enrolment
01/09/2023

Date of final enrolment
30/11/2024

Locations

Countries of recruitment
Türkiye

Sponsor information

Organisation
Lokman Hekim Üniversitesi

ROR
https://ror.org/04v8ap992

Funder(s)

Funder type

Funder Name
Investigator initiated and funded

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not expected to be made available

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Protocol file			18/03/2026	No	No