

Improving breast self-examination practices among rural women using mannequin-based health education by healthcare professionals in Bihar

Submission date 24/01/2025	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
Registration date 29/01/2025	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
Last Edited 29/01/2025	Condition category Other	<input type="checkbox"/> Individual participant data <input checked="" type="checkbox"/> Record updated in last year

Plain English summary of protocol

Background and study aims

Breast cancer is the most common cancer among women worldwide, and early detection can significantly improve outcomes. In India, breast cancer is often diagnosed at advanced stages due to delayed detection and limited access to screening services. Breast self-examination (BSE), a simple, non-invasive method, is recommended for early detection, especially in low-resource settings. However, BSE practices remain underutilized in India, particularly in rural areas. This study aims to assess the effectiveness of mannequin-based health education provided by healthcare professionals on the accuracy of breast self-examination practices among women aged 20–45 years in rural Bihar.

Who can participate?

Women aged 20–45 years residing in selected rural villages of Bihar for at least one year, who are willing to participate and provide informed consent

What does the study involve?

Participants are divided into two groups: intervention and comparator. All participants undergo a baseline assessment and receive a video demonstration and health talk on breast cancer risk factors and prevention. The intervention group receives mannequin-based BSE training in two sessions: the first at one month and the second at three months after enrollment. The comparator group receives only standard care. Acceptability of the mannequin-based training is assessed in the intervention group immediately after the first session using the Kirkpatrick model. An endline assessment for both groups is conducted six months after enrollment to evaluate BSE practices.

What are the possible benefits and risks of participating?

Participants in the intervention group may develop correct BSE practices, aiding in early breast cancer detection. Risks are minimal, with slight discomfort possible during mannequin-based training.

Where is the study run from?

The study is being conducted by the Department of Community and Family Medicine, AIIMS Patna, and implemented in villages under the Rural Health Training Centre (RHTC), Naubatpur.

When is the study starting and how long is it expected to run for?

Overall study dates are June 2023 to February 2025. The recruitment started in February 2024 and will run until February 2025, with the endline assessment expected to conclude by then.

Who is funding the study?

The study is funded by the Indian Council of Medical Research (ICMR).

Who is the main contact?

Dr Swapnil Singh, Department of Community and Family Medicine, AIIMS Patna, swapnilsinghbaghel02@gmail.com, swapnil11623@aiimspatna.org

Contact information

Type(s)

Public, Scientific, Principal Investigator

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Additional identifiers

EudraCT/CTIS number

Nil known

IRAS number

ClinicalTrials.gov number

Nil known

Secondary identifying numbers

No-HRD-Head/PGthesis-program/2023-24(68) Dated 27/08/2024

Study information

Scientific Title

Effectiveness of mannequin-based health education intervention provided by healthcare professionals on the breast self-examination practices among women aged 20-45 years in rural Bihar: a community-based pragmatic controlled trial

Acronym

EMPOWER

Study objectives

Null hypothesis- Mannequin-based health education intervention provided by healthcare professionals does not increase the correctness of breast self-examination practices among women aged 20-45 years in rural Bihar.

Alternate hypothesis- Mannequin-based health education intervention provided by healthcare professionals significantly increases the correctness of breast self-examination practices among women aged 20-45 years in rural Bihar.

Ethics approval required

Ethics approval required

Ethics approval(s)

Approved 05/12/2023, Institutional Ethics Committee AIIMS Patna (Phulwarisharif, Patna, 801507, India; +91 0612-2451006; admin@aiimspatna.org), ref: AIIMS/Pat/IEC/PGTh/Jan23/10

Study design

Interventional cluster-randomized unblinded community-based pragmatic controlled trial

Primary study design

Interventional

Secondary study design

Cluster randomised trial

Study setting(s)

Community, Home

Study type(s)

Quality of life, Screening, Efficacy

Participant information sheet

See study outputs table

Health condition(s) or problem(s) studied

Breast cancer awareness and the accuracy of breast self-examination practices among women aged 20–45 years in rural Bihar

Interventions

The study includes two groups: intervention and comparator. Two out of four villages in the AIIMS Patna field practice area were purposively selected—those farthest apart to minimize

contamination. Randomization was then conducted at the village level using the chit system, where chits were drawn to allocate one village to the intervention group and the other to the comparator group.

- **Baseline Assessment:** All participants will watch a video on breast self-examination (BSE) and receive a health talk on breast cancer risk factors and prevention.
- **Intervention Group:** Participants will undergo mannequin-based BSE training in two one-on-one sessions: the first at one month and the second at three months post-enrollment, with a detailed demonstration of the BSE steps. Acceptability of the intervention will be assessed in this group immediately after the first session using the Kirkpatrick model.
- **Comparator Group:** Participants will not receive the mannequin-based training but will continue to receive standard care at the Rural Health and Training Centre (RHTC), Naubatpur.
- **Endline Assessment:** Both groups will undergo an endline assessment six months post-enrollment.

Intervention Type

Behavioural

Primary outcome measure

Correctness of breast self-examination (BSE) practices is measured using a checklist of BSE steps at baseline and at 6 months post-enrollment.

Secondary outcome measures

Acceptability of mannequin-based BSE training measured using the Kirkpatrick model checklist immediately after the first intervention session in the intervention group.

Overall study start date

23/06/2023

Completion date

28/02/2025

Eligibility

Key inclusion criteria

1. Women aged 20-45 years
2. Residing in the selected rural areas for at least 1 year
3. Participants who are willing to participate in the educational intervention and follow-up assessments

Participant type(s)

Healthy volunteer

Age group

Adult

Lower age limit

20 Years

Upper age limit

45 Years

Sex

Female

Target number of participants

124

Key exclusion criteria

1. Women with a previous history of breast cancer
2. Those who have undergone mastectomy
3. Women with any history of breast lesions Suspected to be benign or cancerous lesions
4. Women who have undergone any training on screening for breast cancer
5. Women who are part of any project related to screening and/or management of breast cancer
6. Women with known psychiatric illnesses (documented/self-reported)

Date of first enrolment

05/02/2024

Date of final enrolment

31/07/2024

Locations

Countries of recruitment

India

Study participating centre

Maharajganj

Village- Maharajganj/ Block - Naubatpur/ City- Patna/Bihar India

Patna

India

800007

Study participating centre

Ajwan

Village-Ajwan/ Block - Naubatpur/ City- Patna/Bihar India

Patna

India

801109

Sponsor information

Organisation

All India Institute of Medical Sciences, Patna

Sponsor details

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Sponsor type

University/education

Website

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Funder(s)**Funder type**

Research council

Funder Name

Indian Council of Medical Research

Alternative Name(s)

Indian Council of Medical Research, Government of India, Indian Council of Medical Research (ICMR), New Delhi, ICMROrganisation, , Indian Council of Medical Research, New Delhi, ICMR, ICMRDELHI, ...

Funding Body Type

Government organisation

Funding Body Subtype

National government

Location

India

Results and Publications**Publication and dissemination plan**

Planned publication in a international peer-reviewed journal

Intention to publish date

02/01/2026

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are/will be available upon request from Dr Swapnil Singh, swapnilinghbaghel02@gmail.com, swapnil11623@aiimspatna.org. Researchers who provide a methodologically sound proposal may request access. Data will be shared to achieve the aims specified in the approved proposal. To gain access, data requestors must sign a data access agreement.

De-identified individual participant data for primary and secondary outcomes will be available. Only de-identified data related to primary and secondary outcomes will be shared. A Statistical Analysis Plan will be shared. The study protocol will not be shared. Data will be available within three months of a formal request and will remain available for a period of five years.

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Participant information sheet			29/01/2025	No	Yes