

# Leveraging Women Collectives for Improved Child Nutrition: Evidence from a Longitudinal Study in Bihar, India

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# Introduction



## National Trend

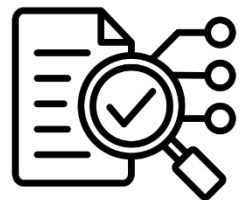
Child malnutrition indicators have improved from NFHS-4 to NFHS-5:

- **Stunting:** 38.4% → 35.5%
- **Wasting:** 21.0% → 19.3%
- **Underweight:** 35.8% → 32.1%



## Bihar Situation

Bihar continues to have relatively **higher challenges**: Stunting **43%**, Wasting **23%** and underweight **41%**.



## Key Drivers

Socioeconomic barriers, poor feeding practices, infections, and gaps in service coverage.



## Infant & Young Child Feeding Practices

- Only 8% of children (6–23 months) receive an adequate diet in Bihar.
- Only 11% of children in Bihar consumed a diversified diet



Many development agencies including PCI has been supporting Bihar government to improve the nutrition landscape in the state.



## TA to JEEViKA

- PCI has been providing TA to JEEViKA – the state rural livelihood mission to leverage the community institutions of women collectives to improve child and maternal nutrition in Bihar
- JEEViKA uses multiple strategies to improve the nutrition of women and children
- Earlier efforts have enhanced dietary intake among children aged 6 to 23 months.

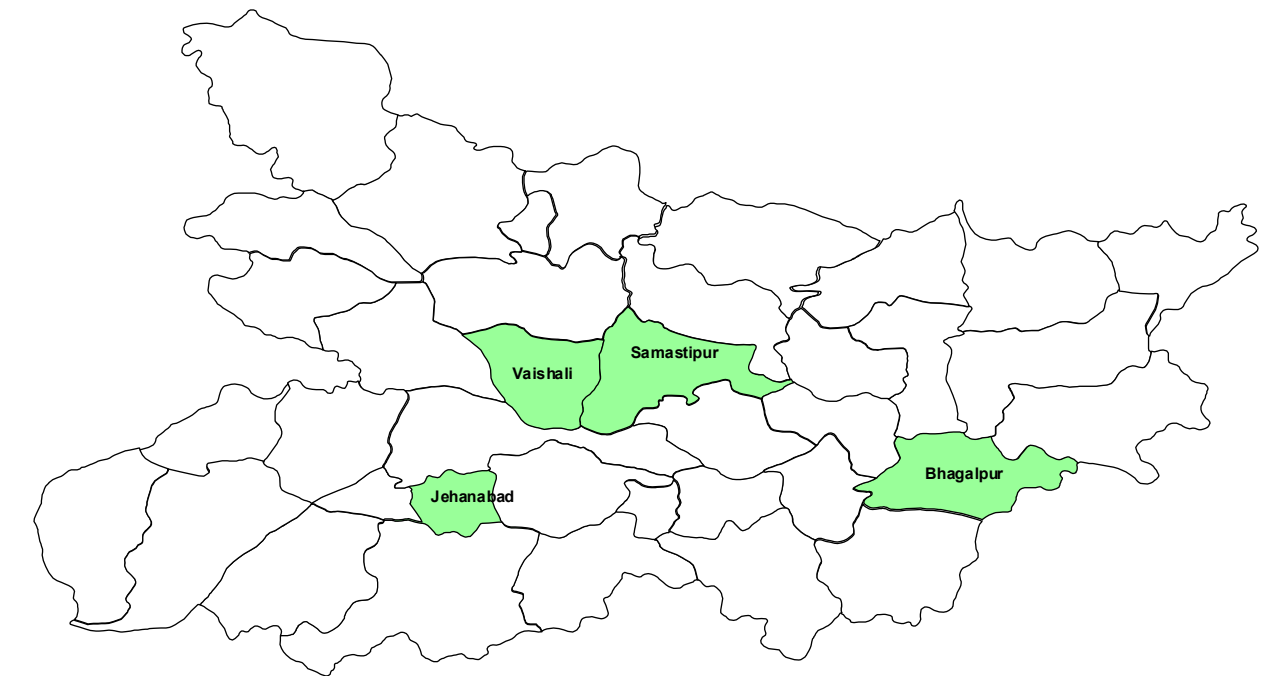
*The question is whether improvement in dietary practices influence child nutrition outcomes?*

# Rationale and Intervention Model

**Program rationale:** Focused parenting on nutritional practices leads to optimum care of young children for ensuring age-appropriate growth & development through dietary diversity and regular growth monitoring

## Program intervention:

The program was designed to improve nutrition metrics, focusing on weight-for-height (wasting) and weight-for-age (underweight) for children aged 6-18 months in four specific districts of **Bihar: Bhagalpur, Jehanabad, Samastipur, and Vaishali**. These districts were chosen purposefully by JEEViKA for being early learning and innovation hubs, and they are supported by a competent and dedicated team.



**The program  
was built on  
two core pillars**

1

First, strengthening parenting by consistently delivering nutrition messages to caregivers and closely tracking child growth through monthly height and weight monitoring.

2

Second, deploying a 360-degree Social Behaviour Change Communication (SBCC) approach, using tools developed via HCD approach and multiple communication channels, to shape positive behaviours and create an enabling environment for sustained change.

# Intervention Model

## Program Objective

Develop a **low-cost sustainable and replicable model of community engagement** leveraging *Women Collectives* to capacitate and trigger the parents for age-appropriate growth of children under 2 years with focused parenting through dietary diversity and monthly growth monitoring for improved child nutritional status.

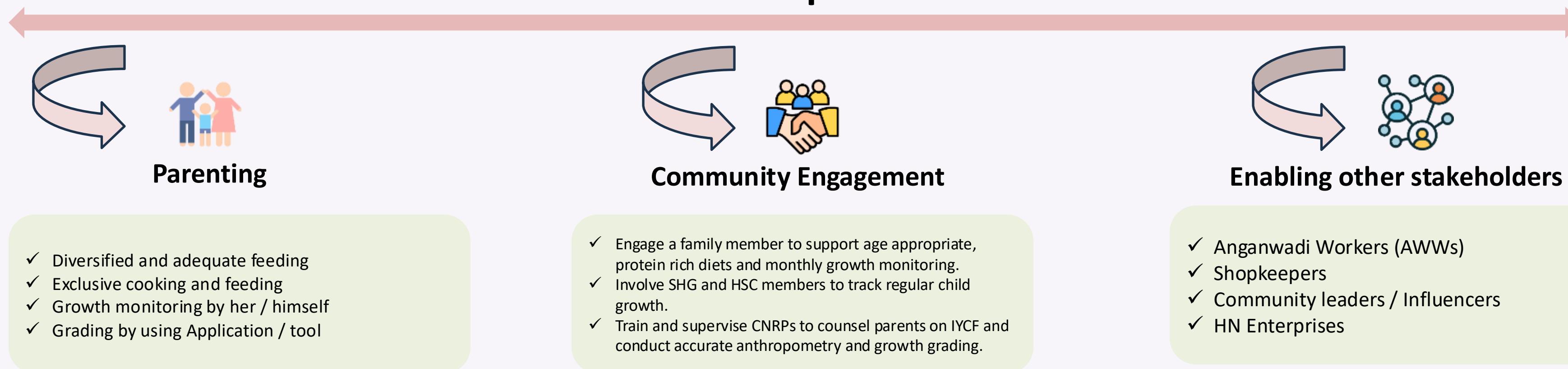
## Target group

Mothers of children aged 6-18 months

## Expected Outcomes

1. Diversified & age-appropriate complementary feeding practices and intake of protein rich diets (eggs, meat/fish/ nuts)
2. Age-appropriate growth & development of identified children

## Core Component





# Operational Process

The operational process revolved around **three key activities to attain the expected outcome:-**



## Home Visits

CNRP carried out fortnightly home visits with the identified children to counsel their parents and motivate them to improve their knowledge, understanding, and practices related to IYCF, followed by reinforcement during subsequent visits.



## Growth Monitoring

The CNRP carried out monthly growth monitoring using the provided anthropometric tools and encouraged parents to continue the practice regularly at the Anganwadi Centre or with the support of the CNRP, local doctor, or local entrepreneur.



## Grading

The CNRP enabled parents to carry out the process themselves by using the provided tools. The CNRP also validated the grading done by parents and retrained them whenever needed to ensure accuracy.



**Pilot Duration: 12** months after commencement (Sept'24 – Oct'25)



## Key Intervention

- BCC and grading tool design, development and field testing
- Training & Capacity Building
- Community Engagement
- Line listing and identification of target beneficiaries
- Social and Behavior Change Communication
- Continuous Growth Monitoring



# Self-Grading Tool of IYCF practice and Growth monitoring

[illegible]



# Study Objectives & Hypothesis



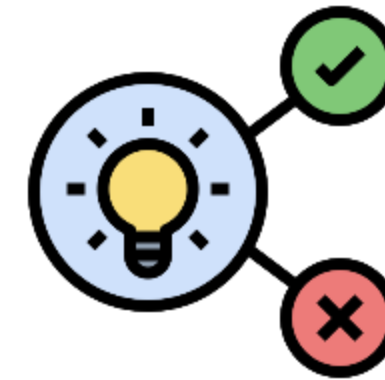
## Study Objectives

**SO-1:** To evaluate the effectiveness of the SHG-based SBCC nutrition intervention in improving the key nutritional outcomes among children aged 6-18 months in the intervention districts.

**SO-2:** To assess changes in dietary diversity and meal frequency among children aged 6-18 months following the nutrition intervention.

**SO-3:** To determine the impact of the intervention on caregivers' knowledge and practices regarding optimal child feeding and nutrition.

**SO-4:** To analyze the level of caregiver's participation in SHG-led nutrition activities and its correlation with the nutritional status of their children.



## Hypothesis

**H1:** Children aged 6-18 months who were part of households participating in the SHG-based SBCC nutrition intervention would exhibit significant improvements in nutritional outcomes, specifically reductions in wasting and underweight, compared to those who were not part of the intervention.

**An opportunity to test the direct influence of diet diversity on the growth outcomes of children!**

# Methods

|                   |   |
|-------------------|---|
| Study design      | A <b>longitudinal cohort design</b> was used, involving two rounds of quantitative surveys.   |
| Study sites       | Four districts in <b>Bihar — Bhagalpur, Jehanabad, Samastipur and Vaishali</b> — were purposively selected by JEEViKA based on their status as early learning and innovation hubs and the availability of competent program staff. A comparison arm was also identified to enable robust assessment of program effects. |
| Target Population | <b>Mothers of children aged 6 months</b> were recruited at baseline, and a panel was established for the intervention. The same set of respondents were interviewed at endline, after the intervention. By the endline, these children had grown to 18 months of age.   |

|             |          |                                 |                               |
|-------------|----------|---------------------------------|-------------------------------|
| Sample Size | Round    | Intervention Arm<br>(4 Blocks)* | Comparison arm<br>(4 Blocks)* |
|             | Baseline | 340                             | 253                           |
|             | Endline  | 202                             | 204                           |

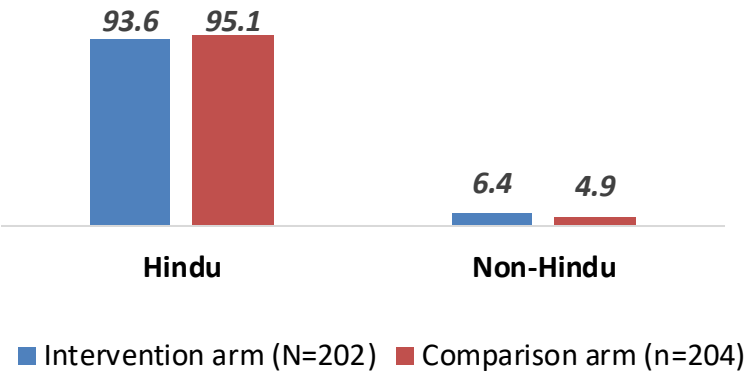
*The analysis was performed on the 406 respondents who participated in both the rounds*

*\*One block was selected for the intervention arm and one for the comparison arm in each of the four districts*

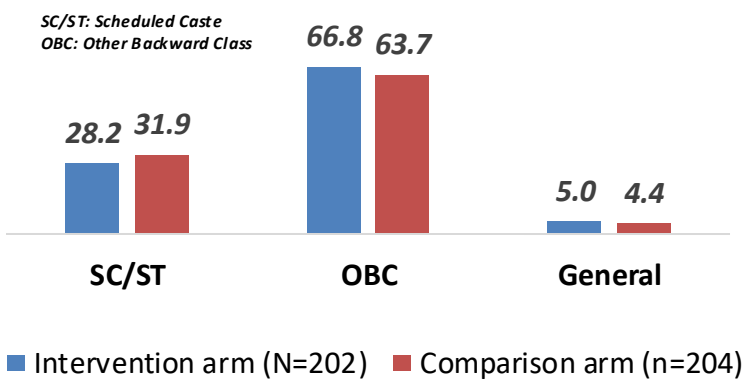


Results

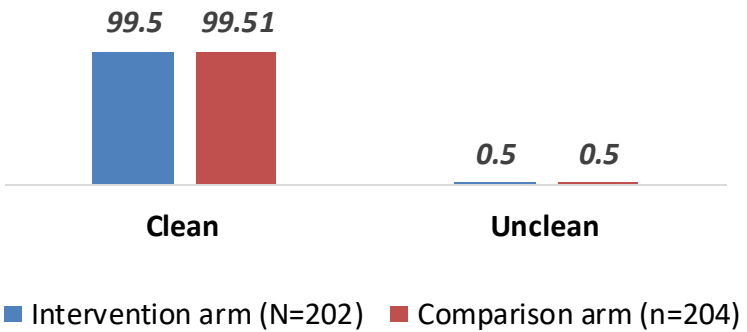
Household Characteristics



Religion (%)

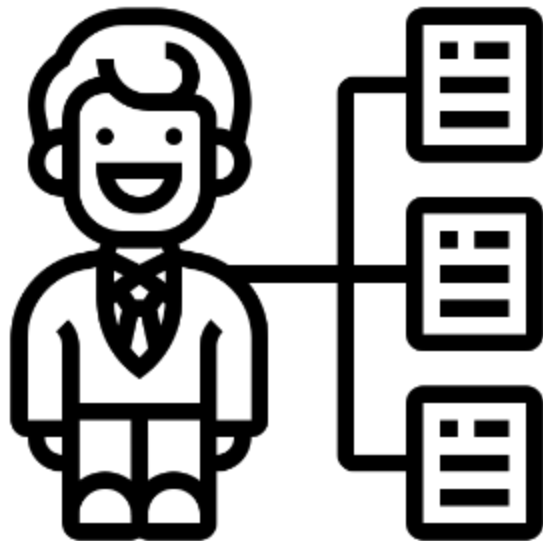


Caste Categories (%)



Source of clean drinking water (%)

Individual Characteristics



Median Age

Intervention Arm  
(N=202)

24.1 years

Educated

78.7%

Husband Median age

33.7 years

Husband Educated

75.6 %

Husband Employed

96.5 %

Comparison Arm  
(N=204)

23.8 years

79.4%

29.4 years

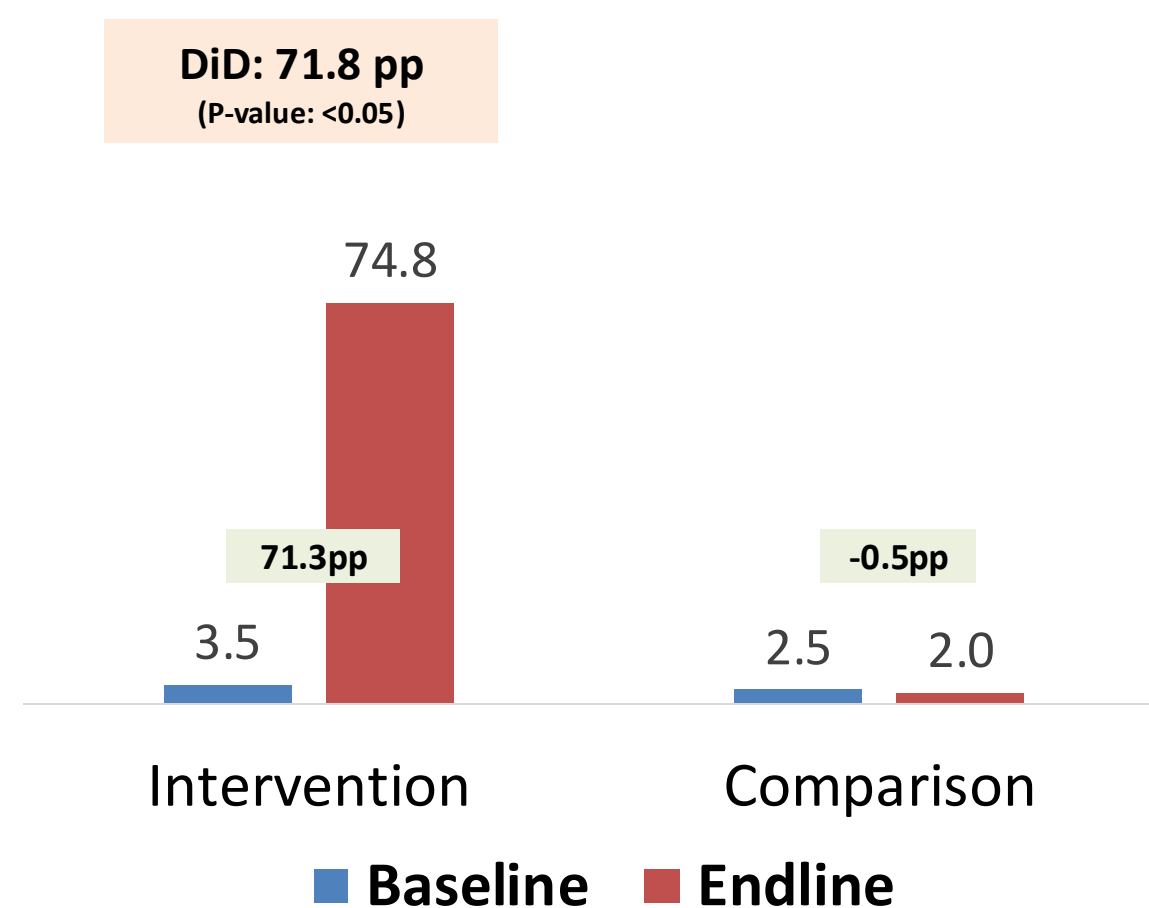
78.9 %

97.1 %

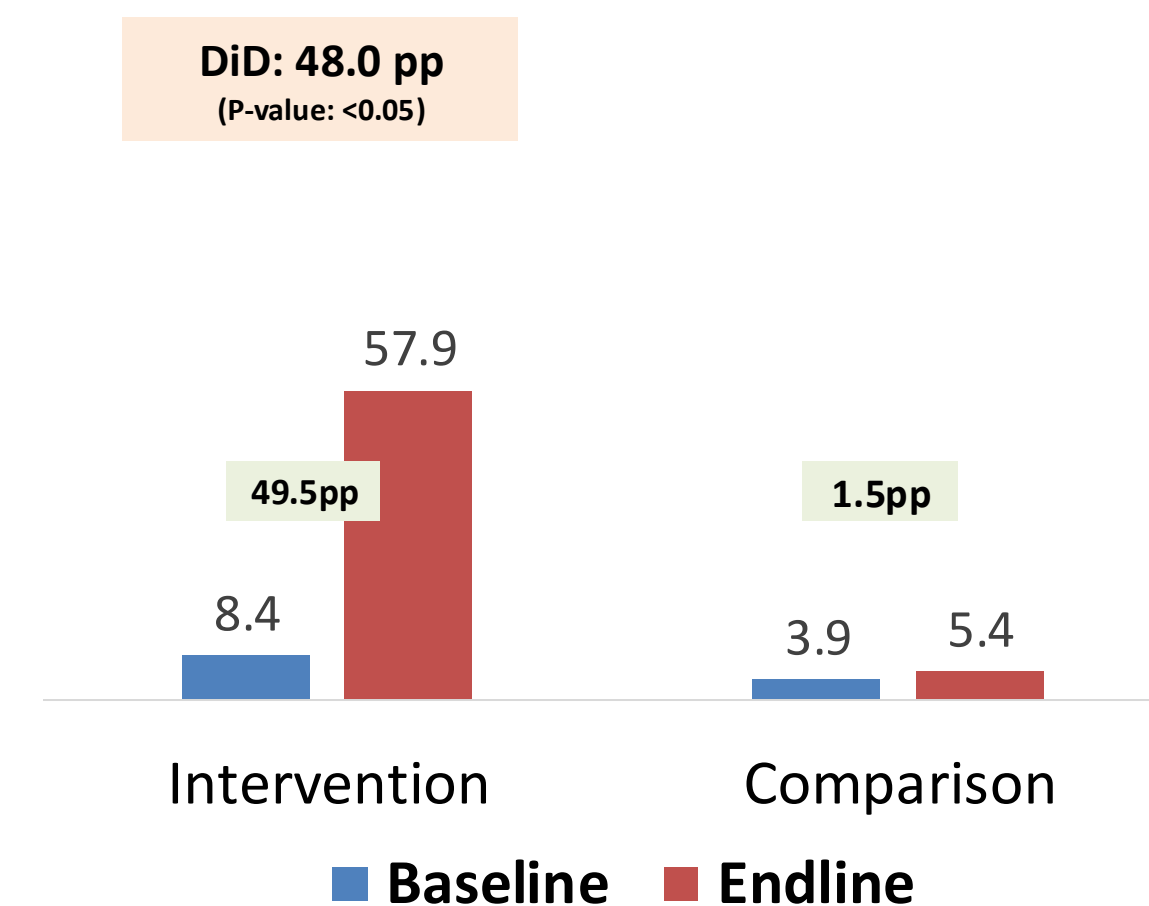
# Results

Awareness of recommended food groups rose sharply among caregivers in the intervention group, with large and statistically significant gains in the intervention arm

*Mothers knew children should be given  
4 out of 7 Food Groups daily*



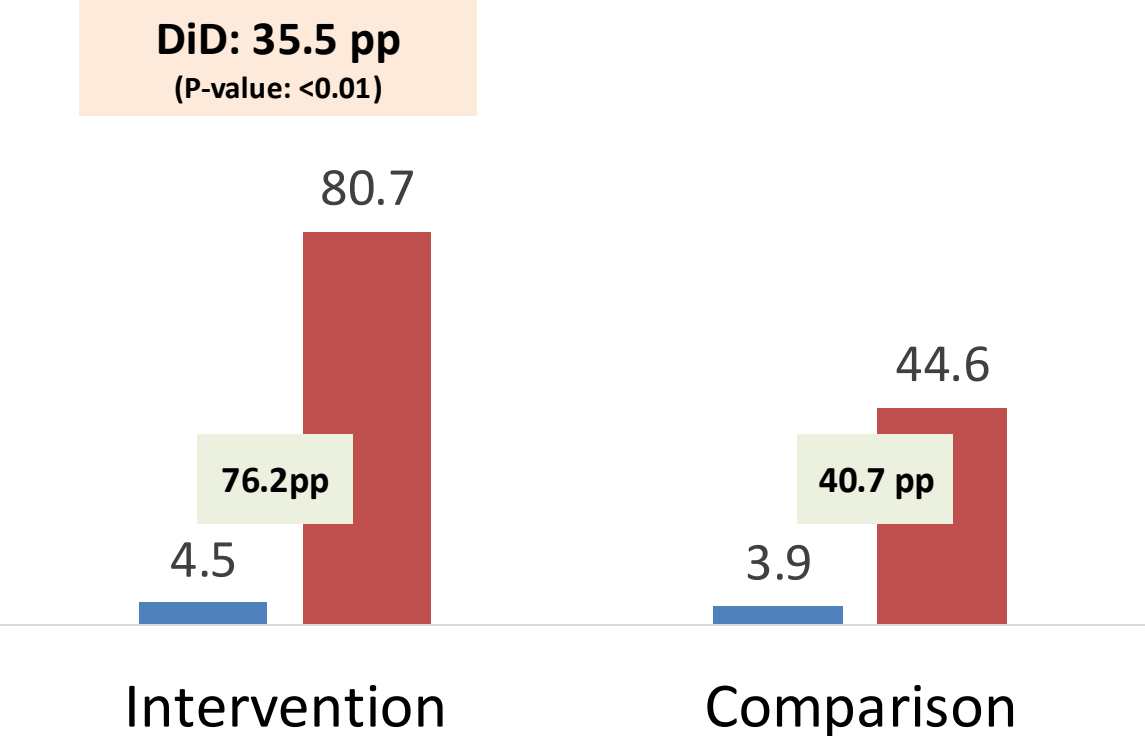
*Mothers knew that they should consume  
5 out of 10 Food Groups daily*



# Results

## Minimum Dietary Diversity

(Children aged 6-18 months) – 4 out of 7 food groups



Baseline (N=202)  
Endline (N=204)

■ Baseline ■ Endline

| Food group Consumption – <i>among children</i> | DiD   |
|--|-------|
| FG_1 (Grains, roots and tubers)                | -0.5  |
| FG_2 (Legumes and nuts)                        | 7.8   |
| FG_3 (Dairy products)                          | 2.3   |
| FG_4 (Eggs)                                    | 13.9* |
| FG_5 (Flesh foods)                             | 6.0*  |
| FG_6 (Vitamin A-rich fruits and vegetables)    | 16.4* |
| FG_7 (Other vegetables, Other fruits)          | 32.7* |

\* If p-value<0.1

The intervention led to a major and statistically strong improvement in children’s dietary diversity, with gains far exceeding those in the comparison group.

## Minimum Dietary Diversity among Mothers

(5 out of 10 food groups)–

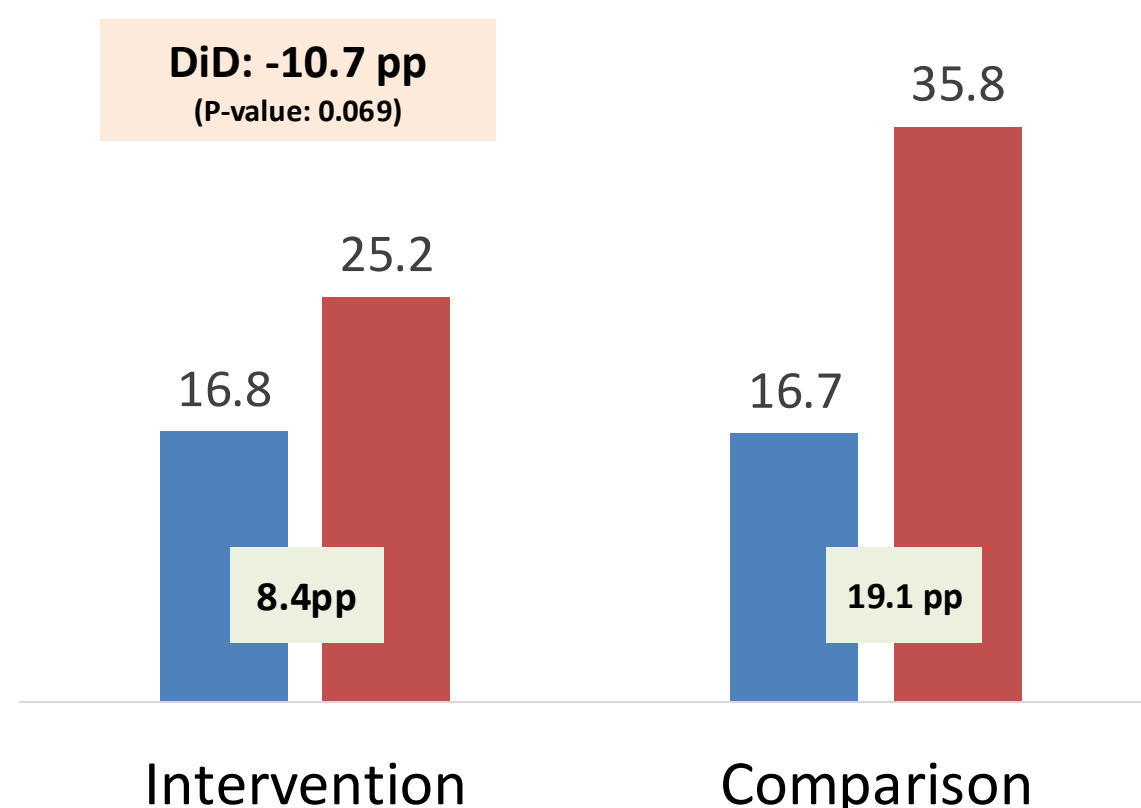
*The difference in differences estimate for minimum dietary diversity among women was 34 percentage points (pp), indicating a substantially improvement in the intervention group (p < 0.01).*



# Results

The intervention may have had a protective effect on stunting, but its impact on other nutrition outcomes—wasting and underweight—appears limited or inconclusive. Although dietary practices have improved, their immediate influence on anthropometric indicators is not evident.

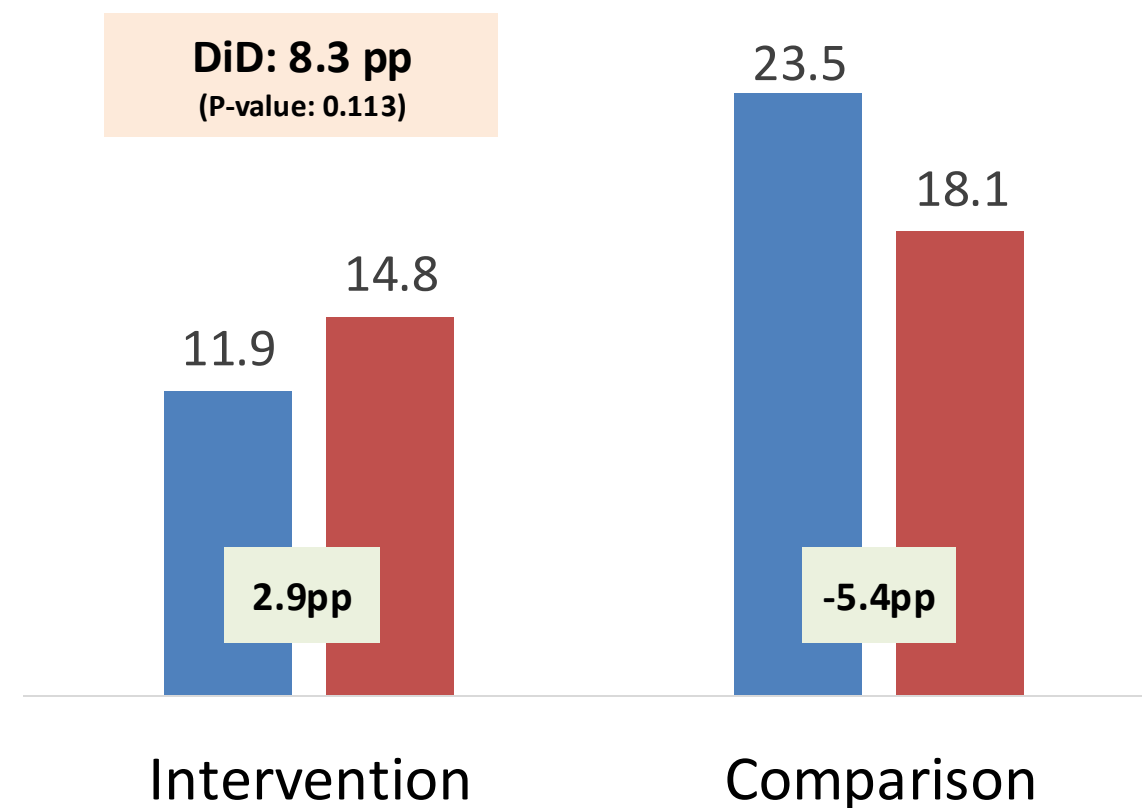
## Stunting



Baseline (N=202)  
Endline (N=204)

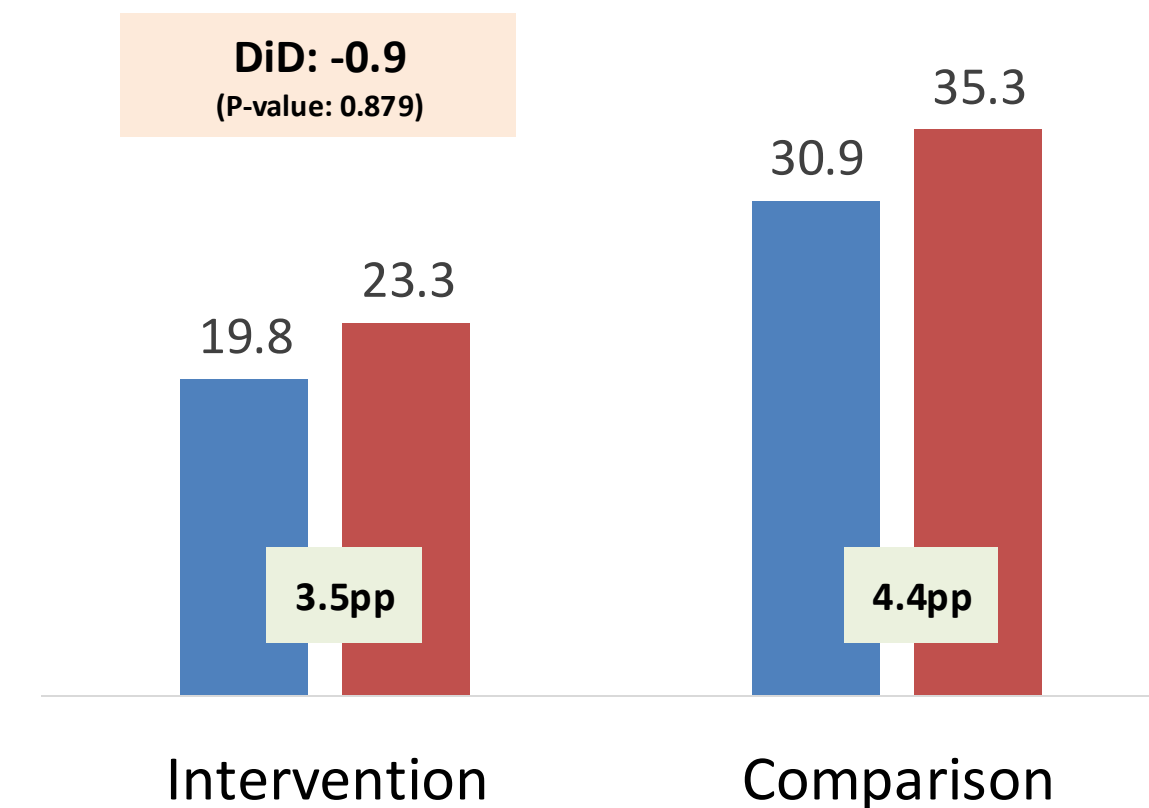
■ Baseline ■ Endline

## Wasting



■ Baseline ■ Endline

## Underweight



■ Baseline ■ Endline

## Key Findings

- ✓ Consistent with the broader existing evidence, the **present study also reports mixed effects.**
- ✓ **Strong gains were observed in secondary outcomes**, including minimum dietary diversity among children and mothers.
- ✓ Mothers in the **intervention** group **displayed better knowledge of recommended food groups** for themselves and their children.
- ✓ **No direct effect was established between dietary diversity and anthropometric measures** – stunting, wasting and underweight among 6-18 months old children

# Conclusion and Way Forward

Overall, although the **intervention** did not lead to large anthropometric changes across all indicators, it **significantly improved dietary quality, nutrition knowledge, and key caregiving behaviours.**

## Way forward

- ✓ JEEViKA's Community Nutrition Resource Persons (CNRPs) support Self Help Groups (SHGs) and Village Organizations (VOs) through community outreach, nutrition messaging, and growth monitoring, using IPC and standard tools.
- ✓ Similar cadres exist in many other SRLMs in India, but they need training, tools and mandate for implementing the program at scale.





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