

Impact of provision of low-cost solar conduction dryers and nutrition education on dietary diversity of women from subsistence farming communities in rural Bangladesh

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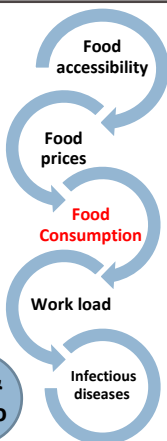
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Background

- Around 54% of women of reproductive age consume inadequately diverse diets in Bangladesh¹
- Dietary diversity further decreases during lean seasons²
- Small and marginal farmers - The most exposed to food insecurity due to limited access to food and financial resources³

The Classical Seasonality-Nutrition Scenario

Diet during lean season



Research Question

Would equipping women from small and marginal farming HHs with solar conduction dryer (SCD) along with nutrition education (NE) enable them to preserve low-cost seasonal foods that would improve dietary diversity ?



Methods and approaches

□ Impact of SCD and NE

- **Study Design:** Cluster randomized controlled trial
- **Duration of intervention:** 8 months

Control
4 Villages
100 HH
NE + SCD

Intervention
4 Villages
100 HH
NE

Rangpur Division, Bangladesh



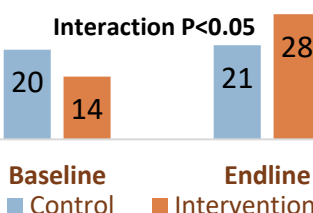
- **Data Collected:** 24-hr diet recall, FFQ, Qualitative interview
- **Outcome Variables:** Dietary diversity (DD) (FAO's MDDS-W), Acceptability
- **Analysis:** Generalized linear mixed-effects



Findings and Interpretation

Baseline Characteristics	Control	Intervention	P-value
Age (Median, Range)	34 (29,39)	33 (27,38)	0.3
Family size (Median, Range)	4 (4,5)	5 (4,6)	0.14
BMI (Median, Range)	22.6 (19.9,24.8)	21.8 (19.6,24.2)	0.3
Illiterate (%)	35	30	0.5
Occupation (%)			
Home-maker	92	85	
Farmer	3.7	8.7	0.14
Agri-Labourer (%)	2.8	5.8	

MDD-W: Proportion (%) of women consuming ≥ 5 out of 10 food groups in a day*



*Adjusted for socio-economic indicators, nutritional status & baseline DD

"We used to eat only 'alur nara, alur dal, alur bhaji' (potat-based recipes) during the rains. Now we can eat whatever we want"
"This is my fridge"

□ Retention of nutrients in SCD-dried foods

- **Foods analysed:** Guava, pineapple, papaya, bitter-gourd, brinjal, potato, green leafy vegetables drumstick, red amaranth, spinach
- **Nutrients analysed:** Vit C, B2, B3, B5, B6, carotenoids
- **Method:** HPLC
- **Findings:** Wide variation in nutrient retention across foods, with an average retention of 10 – 45%. Carotenoid was better retained due to the protective sheet in SCD.

Conclusion

The SCD can be a low-cost solution to preserve surplus food products in rural communities during post-harvest seasons while increasing dietary diversity, especially during the lean season.

Acknowledgement

Our heartiest gratitude to all our participants in the field. We thank ICMR for scholarship and USAID-IKP for funding the study

References

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