

Dietary diversity and nutritional status of women and children: Evidence from the ICRISAT Village Level Studies

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Background

- The latest Global Policy Report (2015) informs that India continues to have child and adult malnutrition despite economic growth and progress
- On one hand child under nutrition is still prevalent in India, on the other, the rates of overweight or obesity are steadily increasing in the recent years, especially among adults resulting in double burden of malnutrition (Kulkarni et al. 2014)
- Dietary diversity is one of the quick and reliable measures of assessing nutritional status in terms of nutrient access and food security. Individual level dietary diversity analysis is predictive of nutrient adequacy, while household level dietary diversity analysis is predictive of household food security and overall socioeconomic status (Ruel, 2002)
- Dietary diversity scores are typically counts of food groups in the diet (i.e. a sum of defined food groups consumed in a defined time period) and are practical for field use because they are simply measured and positively correlated with nutrient intakes.

Objective

To determine whether the dietary diversity of women and children is associated with their nutritional status using two indicators of nutritional security namely, dietary diversity scores and anthropometric measurements of rural women and children in the Semi-Arid Tropics of India.

Study Sample: The data for this analysis comes from 487 households from the three states of Andhra Pradesh, Maharashtra and Telangana (Table 1).

Table 1. Study locations and sample size		
District and State	Village	Sample Size (Number of Households)
Mahabubnagar, Telangana	Aurepalle	65
	Dokur	56
Prakasham, Andhra Pradesh	Pamidipadu	40
	JC Agraharam	40
Solapur, Maharashtra	Shirapur	94
	Kalman	65
	Kanzara	77
Akola, Maharashtra	Kinkheda	50

Methods used for data collection and analysis

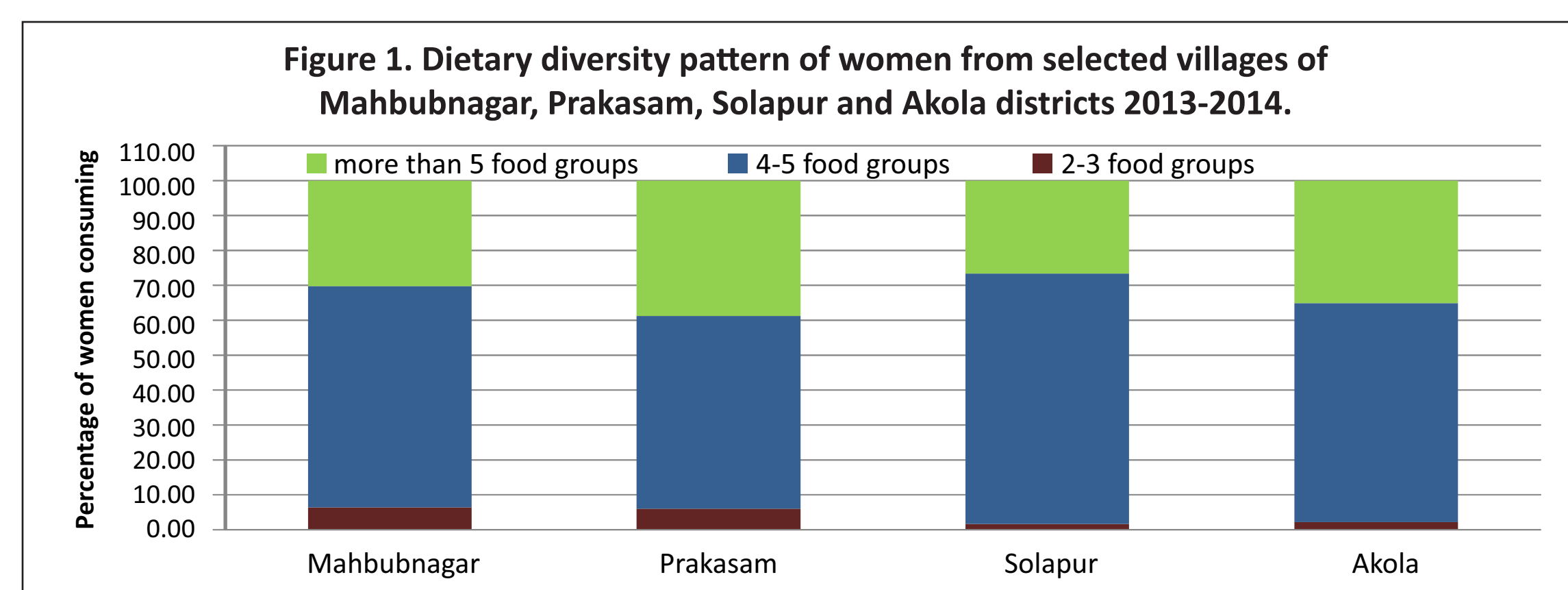
- Teams of resident male and female investigators for collecting data from individual adult men and women, adolescent boys and girls and children in each sample household
- Questionnaire Interview and Focus Group Discussions to elicit detailed information on the food items consumed
- Dietary diversity scores calculated as per FAO guidelines (Kennedy et al. 2010)
- Data:** Anthropometric data of women and children; dietary diversity data of women and children.



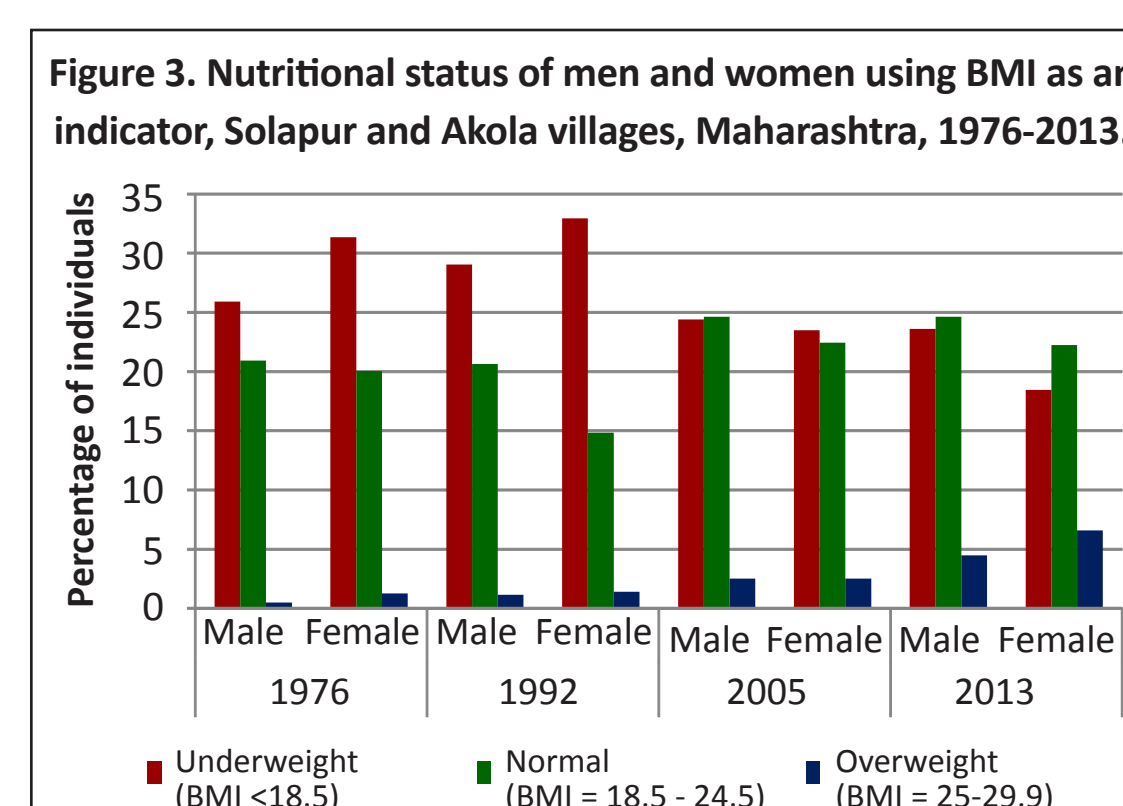
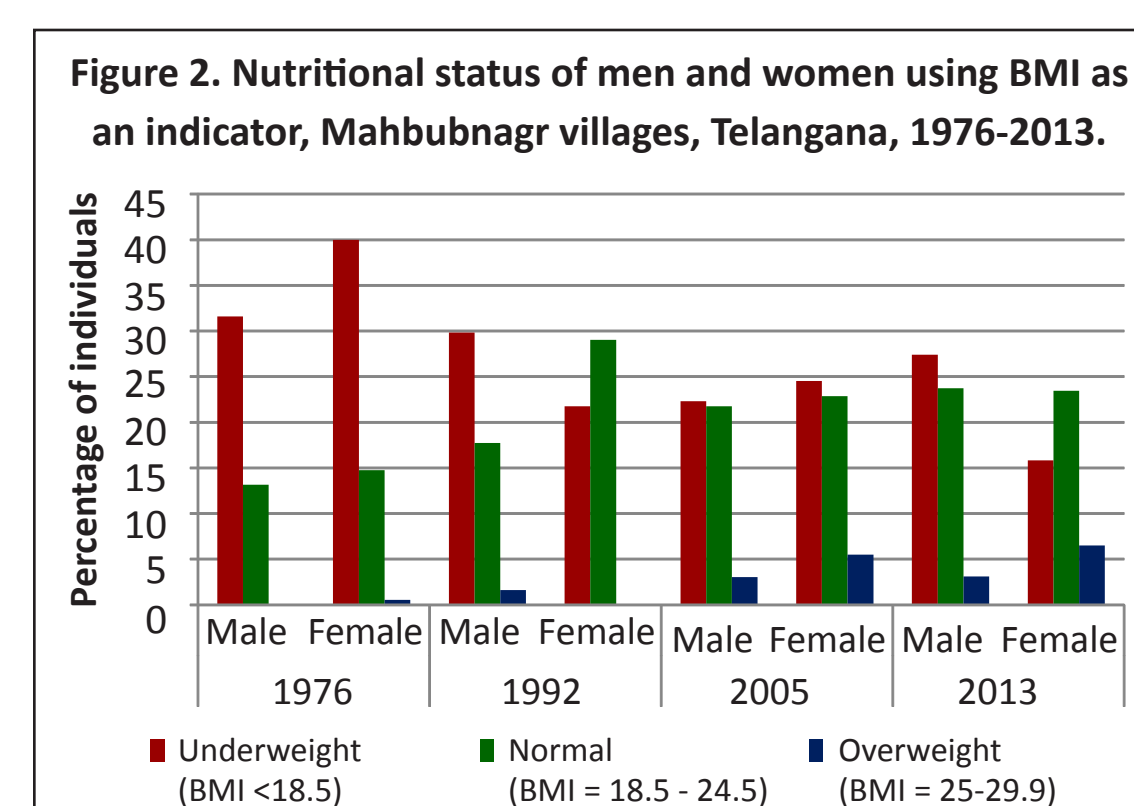
Results

Women

- In all the study villages from the four districts, women were consuming 4-5 food groups, indicating medium level diversity in diets (figure 1)
- On an average, the diet included five food groups which are starchy staples, legumes, roots and tubers, dark leafy green vegetables and milk and milk products. However in Mahabubnagar district, the consumption of starchy staples was highest
- Diversity in the diets of women in Maharashtra villages was significantly higher as compared with women in Telangana and Andhra Pradesh villages



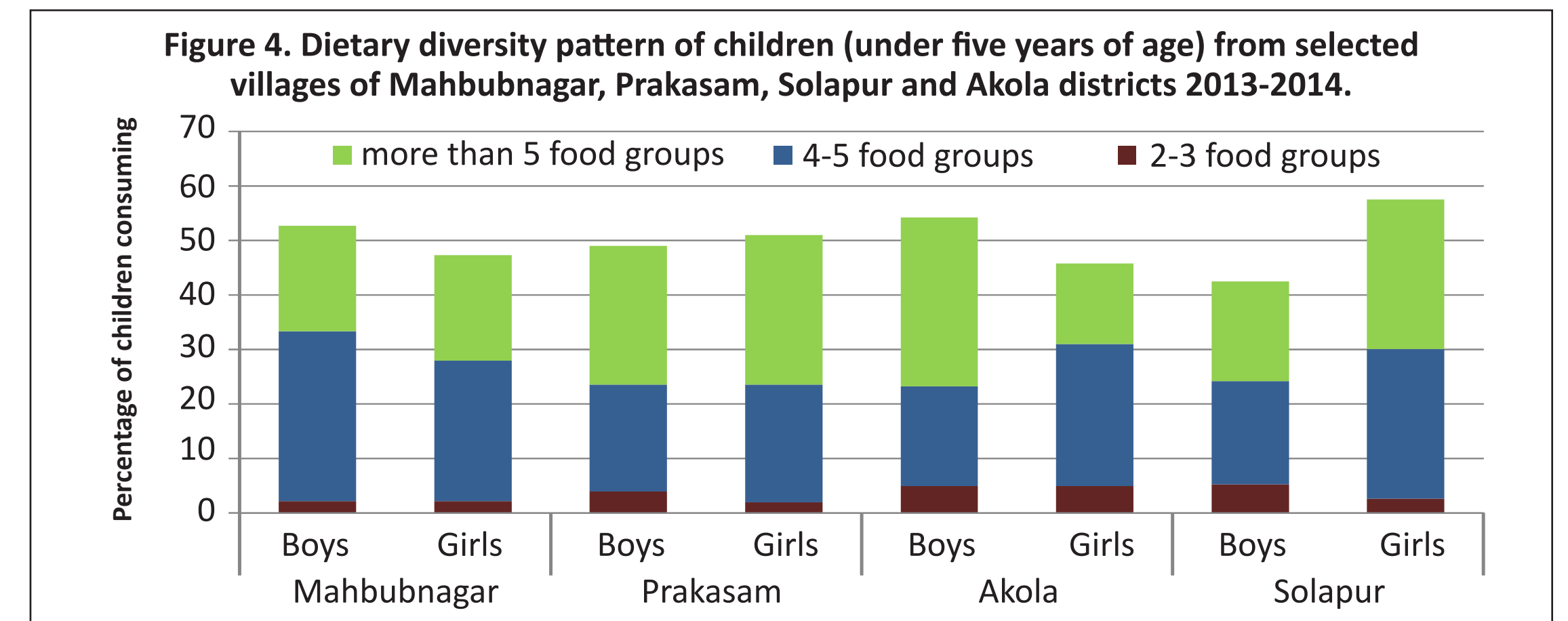
- The nutritional status of women based on the Body Mass Index (BMI) reveals both under nutrition and over nutrition in all the selected districts (figures 2 and 3)



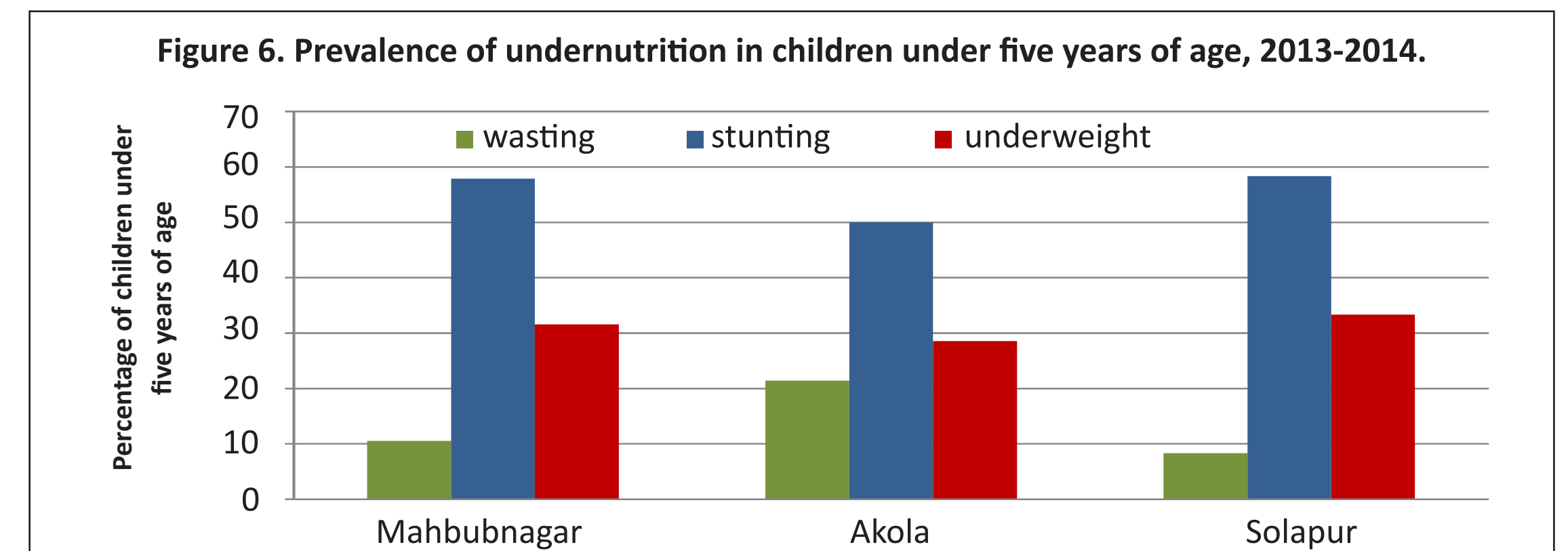
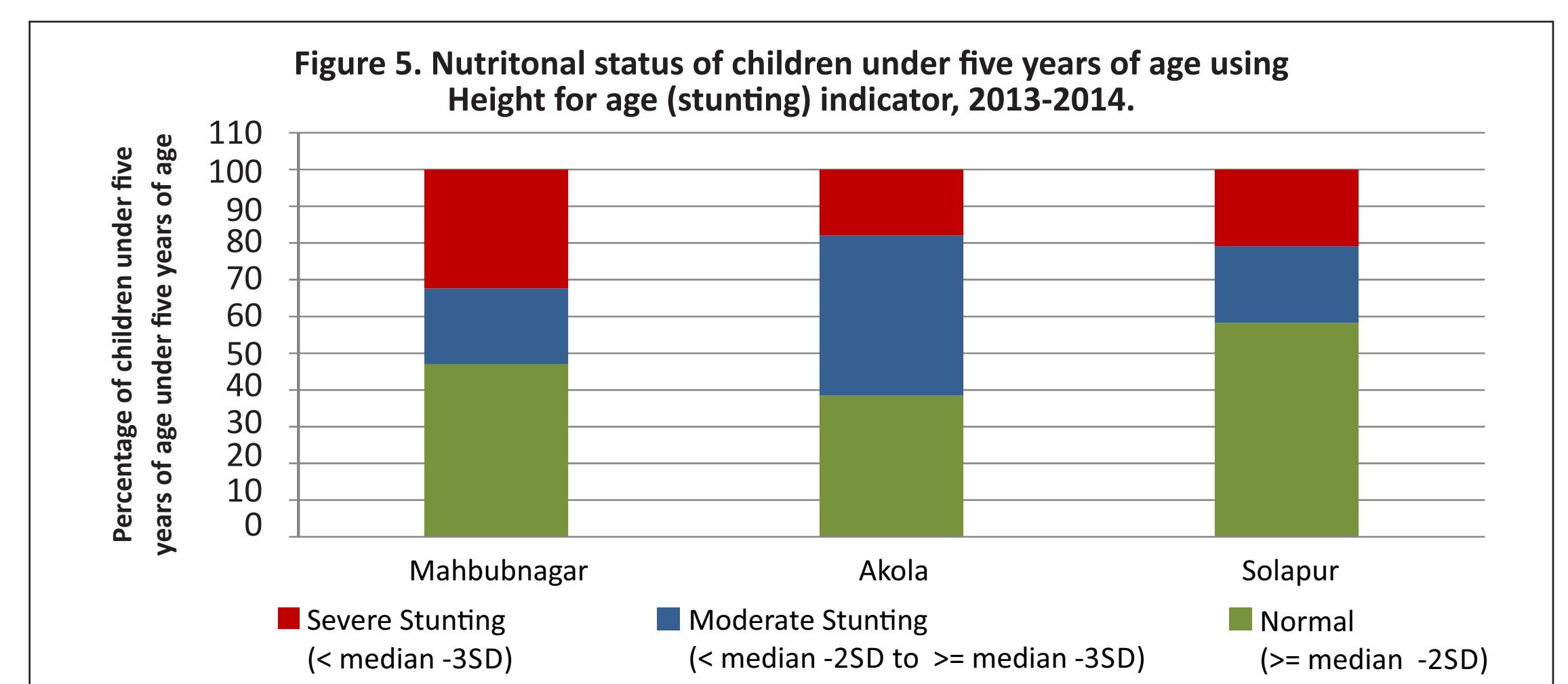
- One of the reasons for this is the high consumption of starchy staples namely rice in Telangana villages and wheat in Maharashtra villages. The introduction of subsidized rice and wheat through the Public Distribution System (PDS) by the governments has led to an increase in consumption of these cereals. Before the introduction of the subsidy, sorghum and pearl millet were consumed in higher quantities. From a sociological perspective, rice and wheat add to the social status of the individual; sorghum and pearl millet are considered to be a poor individuals diet.

Children

- In case of children under five years of age, the dietary diversity scores revealed that their diets are more diverse compared to their mothers and included on an average five food groups which included eggs, dairy products, fruits (figure 4)



- Figures 5 and 6 present the grades of undernutrition in children. In spite of moderate to high diversity in diets of children in Maharashtra villages, stunting prevalence or low height for age of children is high in Akola villages is observed. This could be due to the insufficient food intake or from some infections especially water borne infections in Maharashtra villages. This led us to an important question to be answered and confirmed – Is sanitation a blind spot on nutrition?



Conclusions

- Women and children are experiencing the double burden of malnutrition, especially in the Semi-Arid Tropics regions
- In our study we tried to provide the evidence regarding the relationship between the dietary diversity scores and nutritional status of women & children in the Telangana, Andhra Pradesh and Maharashtra villages.
- Results indicate that different dietary patterns have significant effect on their nutritional status
- It is important for policies and programs to be based on an understanding of broad dietary patterns. Food-based approaches to addressing malnutrition are most likely to be helpful because they target multiple micronutrient deficiencies simultaneously
- Understanding how dietary patterns vary within age groups and over time, determinants of these patterns, and patterns which are most likely to supply adequate nutrition will aid program and policy makers in defining appropriate and effective guidelines for change.

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