

**INTRA-FAMILY DIFFERENCES IN NUTRITIONAL STATUS IN  
URBAN LOW MIDDLE INCOME GROUP FAMILIES**

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# **BACKGROUND INFORMATION**

In the seventies of the last century, over 70% of the families were poor and food insecure.

Low dietary intake and widespread untreated infections resulted in over 70% of children and adults being under nourished.

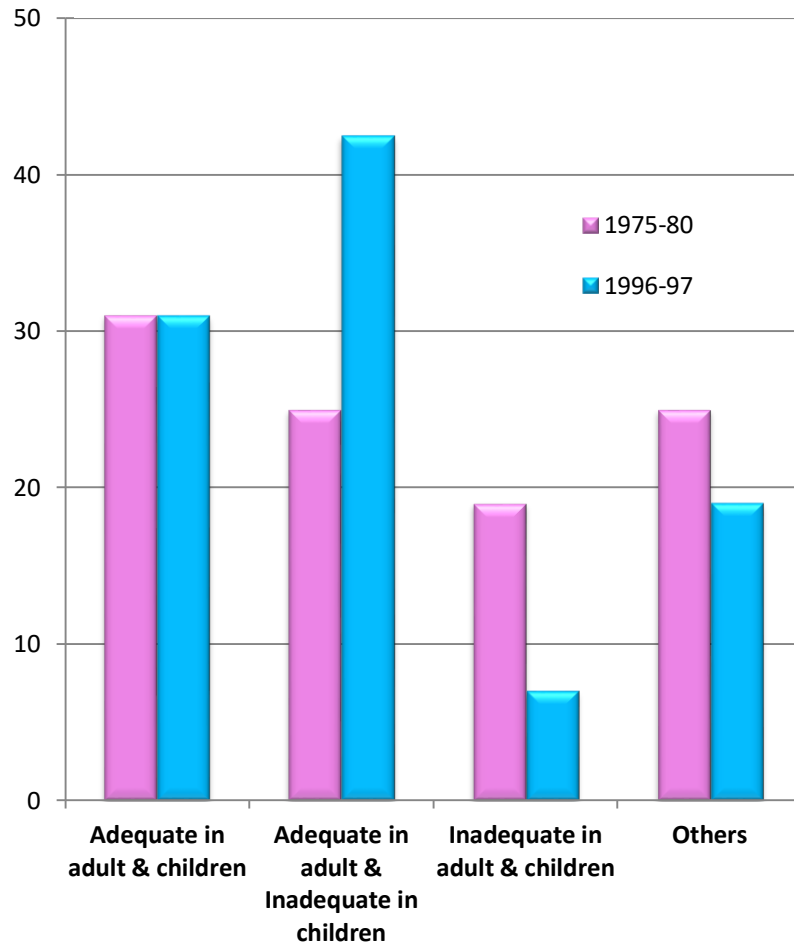
Country initiated programmes to alleviate poverty, improve food security, address the gaps in dietary intake and requirement in vulnerable segments of population

Over time there has been substantial improvement in percapita income, reduction in poverty and improvement in household food security

**Midday Meal Programme and Integrated Child Development Services** providing food supplements to school age and under five children, pregnant and lactating women cover the entire country and are the largest food supplementation programmes in the world

As a result of all these, over the last four decades there had been slow but steady improvement in the household food security and nutritional status of the women and children.

**Fig: Intra- Family distribution of Food**



In the nineties of the last century, data from the **NNMB** showed that even in the house holds where dietary intake of energy was adequate in adults (men and women) energy intake was inadequate in about 40% of the preschool children.

➤ This was attributed to the poor infant and young child feeding and caring practices.

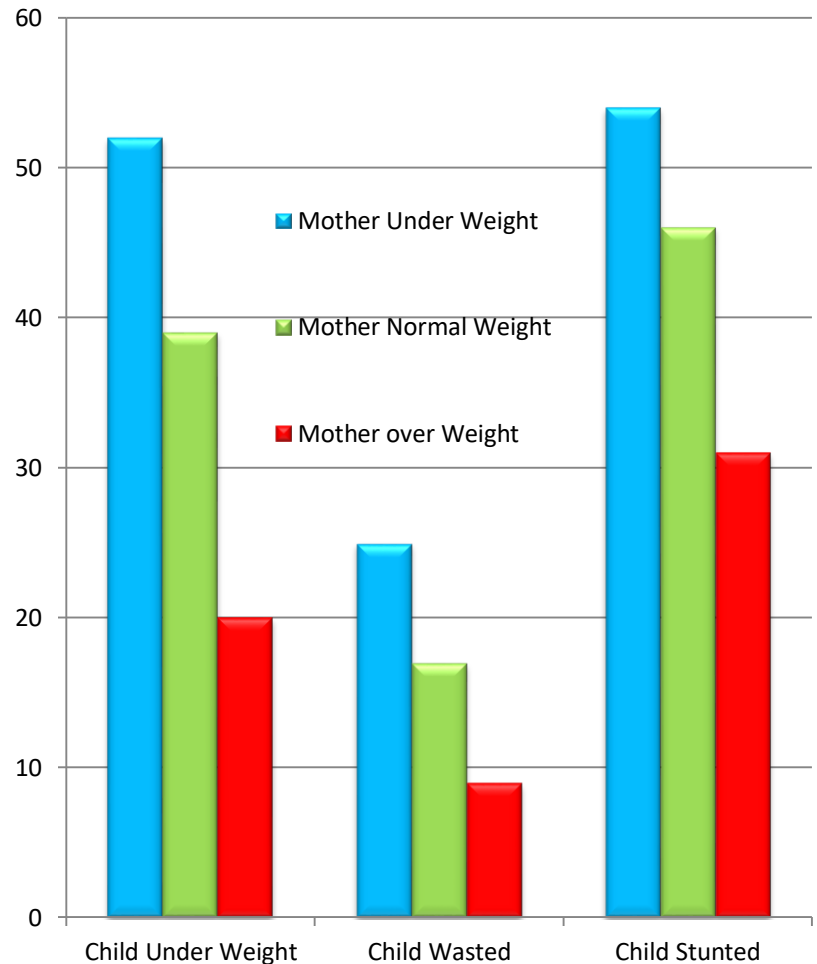
➤ Recent **NNMB** reports suggest that the trend is worsening and currently in nearly 60% of households where energy intake is adequate in adults, intake of preschool children was inadequate.

➤ This may imply that household food insecurity is not a major factor responsible for the undernutrition in preschool children

Data from NFHS-3 confirmed the NNMB findings that even in households where women were normally nourished or over-nourished, there were under-nourished preschool children

This suggest that there are persistent intra-family differences in energy requirements, gap between energy intake and requirements leading to differences in the nutritional status between pre-school children and their mothers.

Differences in nutritional status among mother child dyad  
NFHS-3



# **OBJECTIVES**

- To assess the magnitude of intra-family differences in nutritional status of preschool children, mothers and other women from urban low middle income families.

# LOCALE OF STUDY

The study is being conducted in the anganwadis of Nebsarai, LadoSarai and AnderiaMod in South Delhi.

The criteria for selection of locale is-

- NFI has been working in this locale for the past several years and has a good rapport with the people in the area.
- NFI has already obtained permission to undertake studies on health and nutrition status of the population residing in these areas.
- The families in these areas readily agree to participate in studies on health and nutritional status .

## STUDY DESIGN

Conducted census in all 30 anganwadis–  
Identified families with under five year children and their mothers



Enrolled families likely to stay in the locality and willing to participate in the study



Collect socio-demographic profile of the household



Enroll All Under five children in the family



Enroll All Women in the Under five family (except pregnant)



## Data collection and analysis

Data on length/height (using stature-meter/ infanto-meter), weight (using digital balance) were taken in all under five children .  
Height and weight of the mothers and other women in the family were measured

Nutritional status of under five children were graded using WHO MGRS standards for height, weight and BMI for age

Women were graded as under nourished, normal and over nourished using WHO BMI cut off.

Intra family comparison of nutritional status was done in the following Groups

Mother & Child

Other women & Child

Mother & Other women.

Child & Child

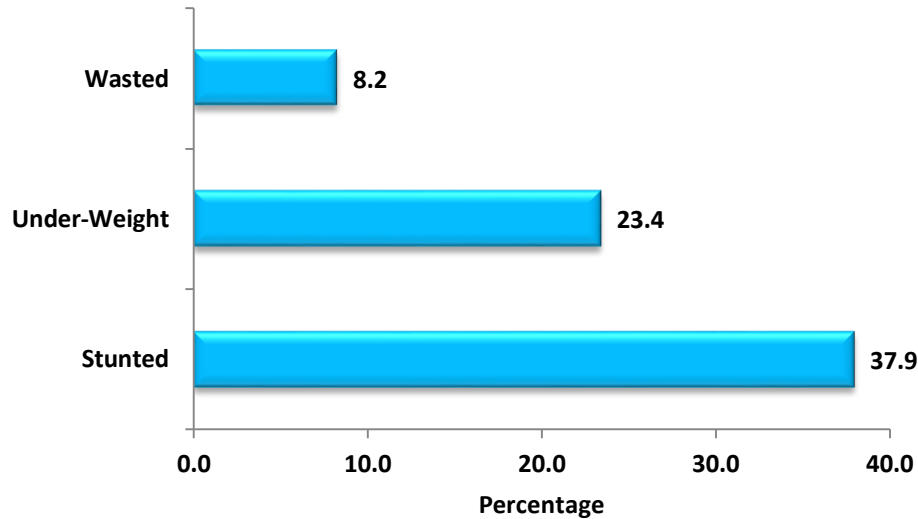


**The Study was approved by the Institutional Ethics Committee of NFI .**

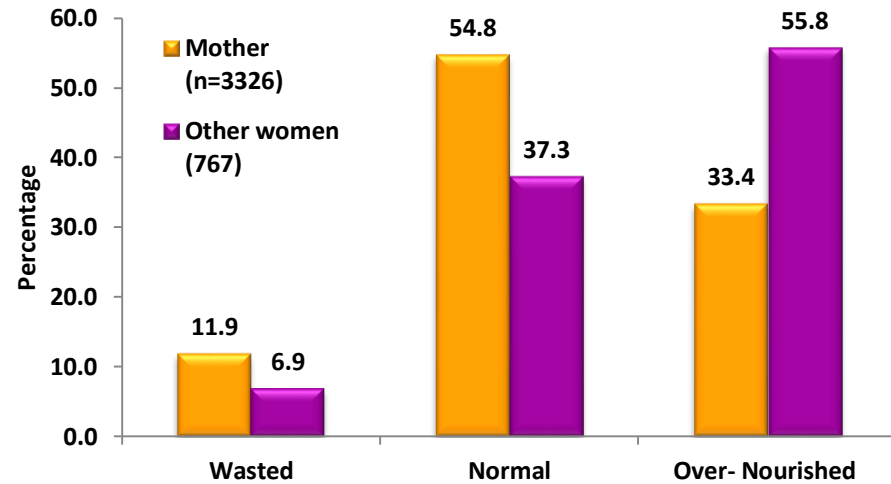
**Permission to conduct the study was obtained from the Deptt of Woman and Child Development NCT Delhi .**

<b>Composition of Household studied</b>	<b>Total no</b>
<b>Children</b>	<b>4105</b>
<b>Mother</b>	<b>3326</b>
<b>Other women</b>	<b>767</b>
<b>Mother &amp; child (M-C) Pairs</b>	<b>4105</b>
<b>Mother &amp; Other women (M-OW) Pairs</b>	<b>816</b>
<b>Under 5 Child &amp; Other women (C-OW) Pairs</b>	<b>981</b>
<b>Child &amp; Child (C-C) Pairs</b>	<b>941</b>

Under-Nutritional rate in under-Five Children (n=4105)



Nutritional Status of Mother And Other Women

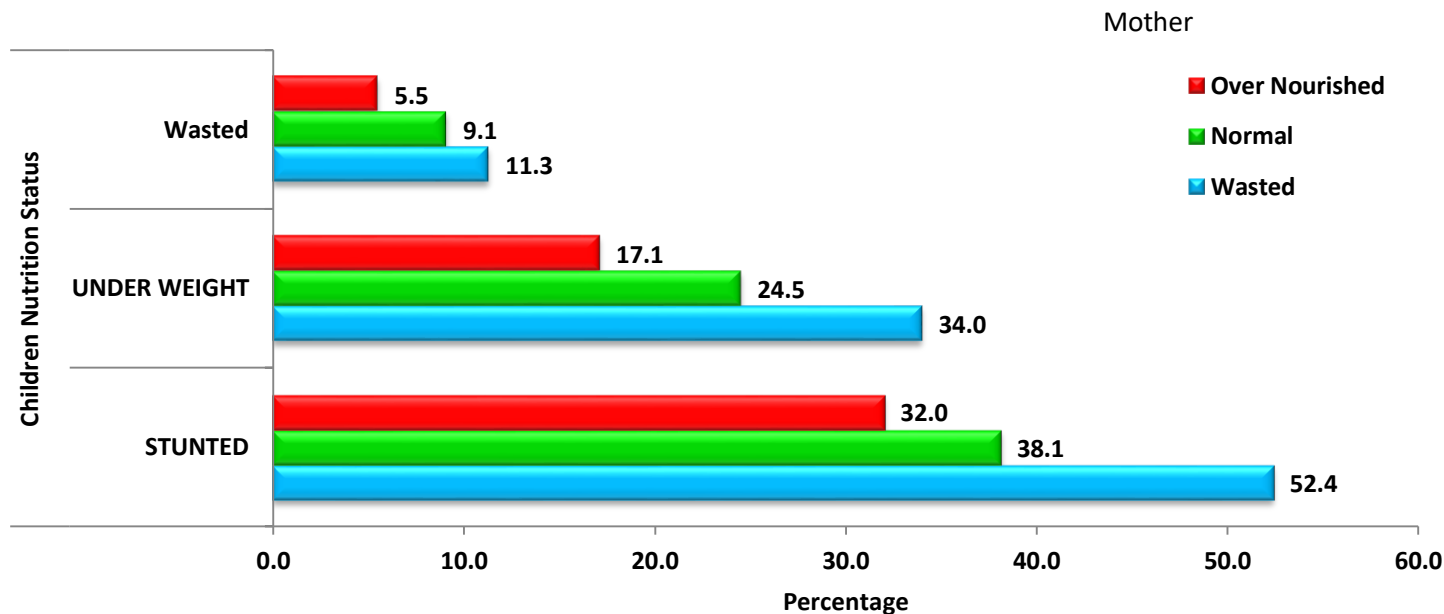


Prevalence of stunting and underweight rates were high (though lower than the national average). Only 8% of under five children were wasted

Prevalence of under-nutrition in adult women was very low. Prevalence of over-nutrition high even among the mothers

Prevalence of under nutrition was very low and prevalence of overnutrition was very high in other women

Nutritional status of children in relation to maternal nutritional status (n=4105)



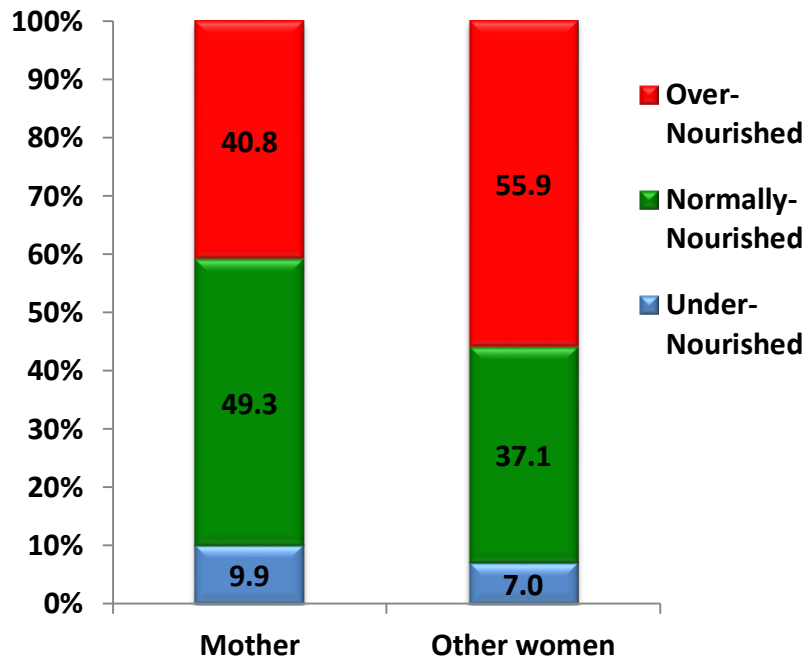
There was a gradient in nutritional status of children as assessed by height, weight and BMI for age in relation to nutritional status of the mother as assessed by BMI.

Stunting, under-weight and wasting rates were higher in children of under-nourished mothers as compared to normally nourished mothers.

However even over-nourished mothers had stunted, underweight and wasted children .

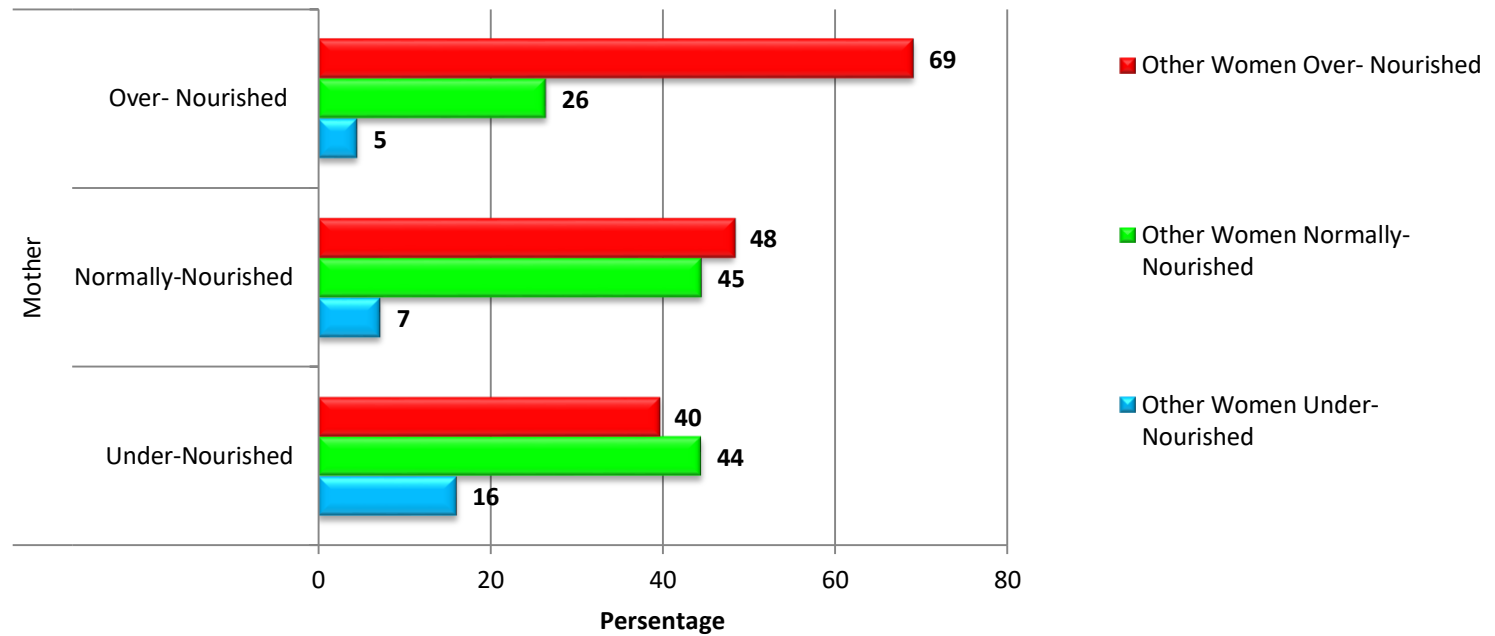
These data suggest that maternal under-nutrition is not the major determinant of child under-nutrition in these urban low income group families.

## Differences in nutritional status between mother and other woman in the family



- Under-nutrition rates in mother and others women was very low suggesting that food insecurity is not a problem in urban low middle income group families .
- About half of the mothers and a third of the other women were normally nourished Higher prevalence of normal nutrition in mothers was perhaps because of the physical activity associated with child caring and rearing
- Over 55.9% of other women ( mostly older than the mothers) were over-nourished .
- This is because they were sedentary and had very low physical activity levels

## Differences in nutritional status between mother and other woman in the family



**Comparison of nutritional status of mothers and other women in the same household is shown in the figure**

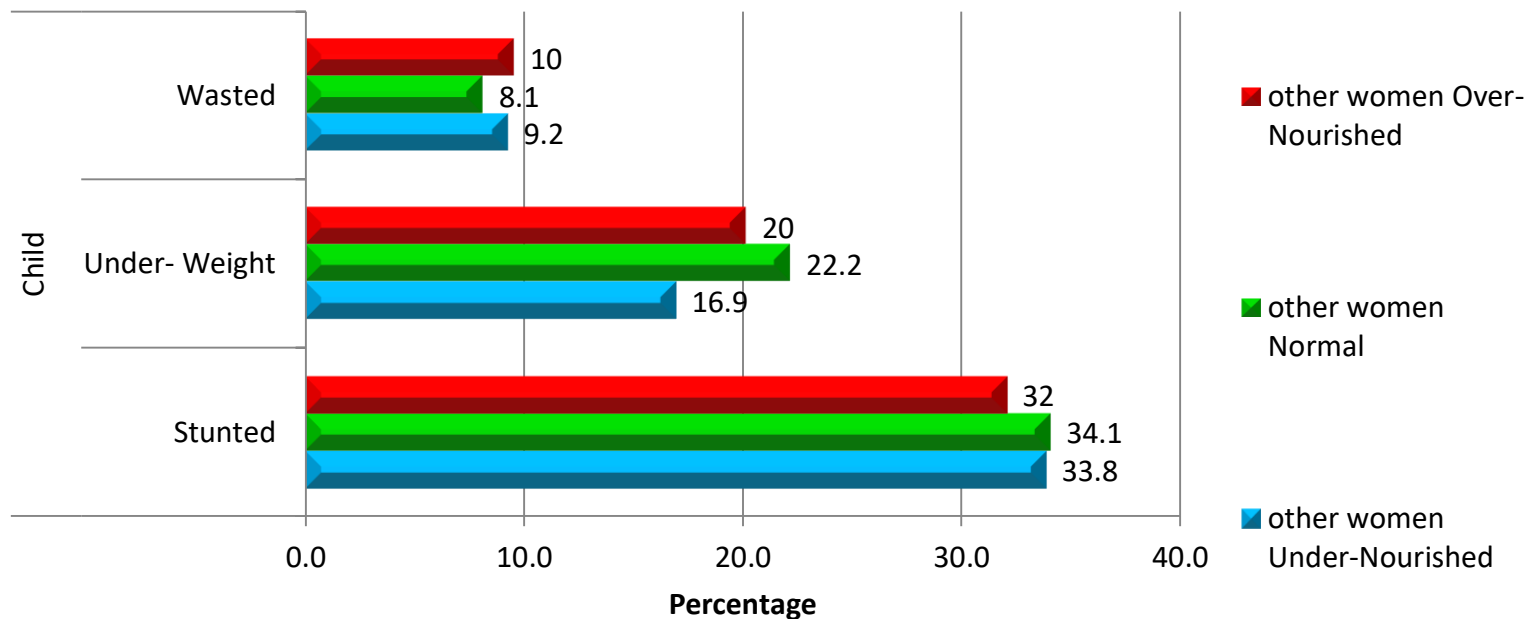
**Undernutrition rates in the other women were the lowest when the mother was overnourished and it was higher when the mother was overnourished.**

**Even when the mother was undernourished 40% of the other women in the family were over nourished**

**Even when the mother was normally nourished 48% of the other women were overnourished .**

**If mother was overnourished nearly 70% of the other women were overnourished**

## Intra-family differences in nutritional status: pre-school children and other adult women in the family

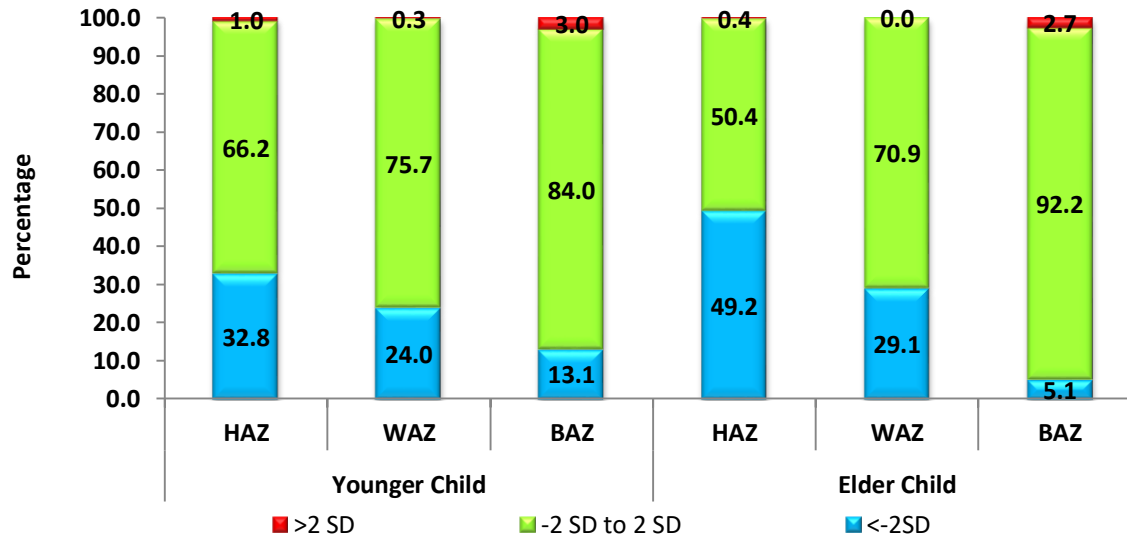


**Prevalence of stunting in under five children is 38%; underweight 23.4% and wasting is 8.2%**

**Prevalence of under-nutrition in the other women is very low and over 55% of the other women were over-nourished**

**In view of these large differences in nutritional status between the under five child and the other woman in the family there were no significant trend in nutritional status of the child in relation to nutritional status of the other woman in the family**

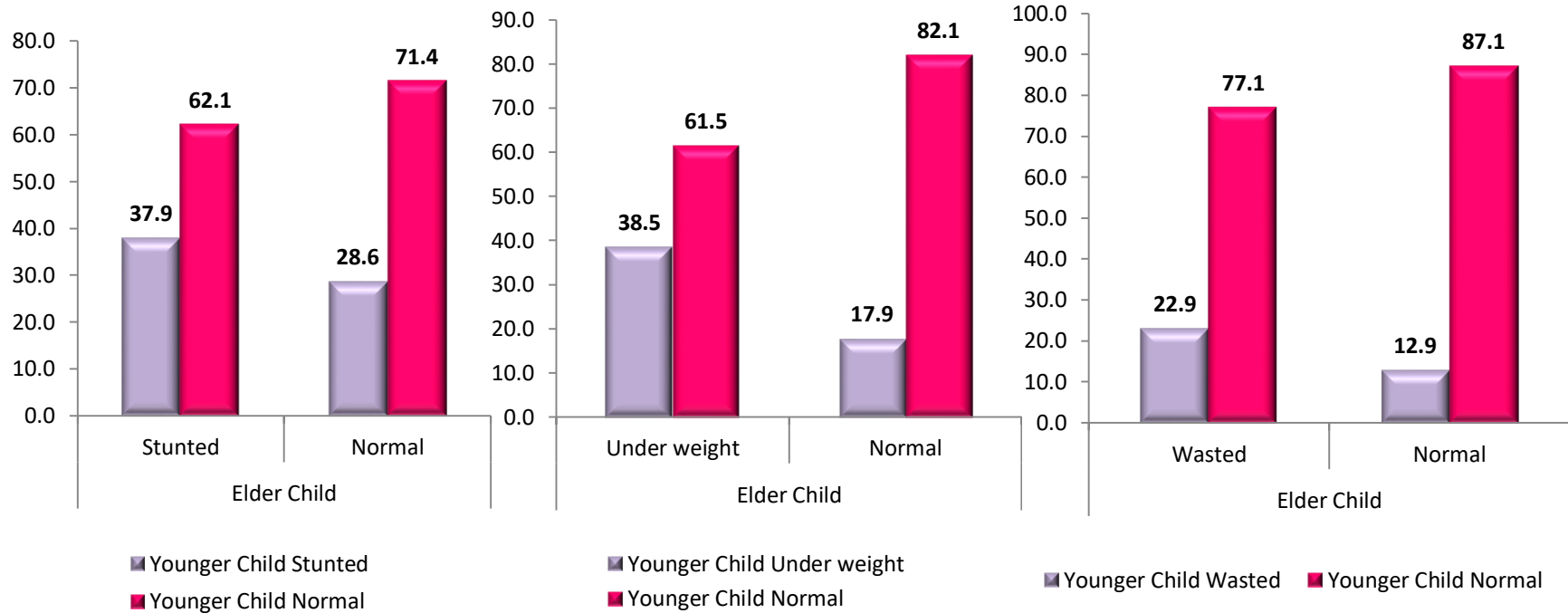
Nutritional Status of Younger and Elder Children



- Prevalence of stunting, under weight rates were higher in elder sibling as compared to the younger one is shown in the figure above
- Stunting and underweight rates were higher in the elder sibling but wasting rates were lower in the elder sibling as compared to the younger sibling
- Numerous studies and surveys have shown that stunting and underweight rates are higher in the 3- 5 year children as compared to 0-3 year children
- This are considered as the effect of age on nutritional status in under five children
- The reduction in wasting rate is not due to improvement in nutritional status but due to increase in stunting rates with age beyond 12 months



## Difference in Nutritional Status between elder child and Younger child in same family



Stunting rates, Underweight rates and wasting rates in the younger children were lower when the elder child had normal height, weight and BMI for age .

If the elder child had stunting , underweight or wasting the stunting , underweight and wasting rates in the younger children was higher

Both siblings share the same genetic and environmental factors at home and hence their nutritional status was essentially similar

## Conclusion

Maternal under-nutrition is relatively rare in urban low income families.

However stunting and under-weight rates in under five children are common.

Therefore there is a large difference in undernutrition rates between mothers and their children

Maternal under-nutrition is not the major factor responsible for child under-nutrition in urban low income families.

Low birth weight, poor infant and young child feeding practices and morbidity may be major factors responsible for under-nutrition in children.

Low physical activity appears to be the major factor responsible for high over-nutrition rates in women .

Over-nutrition rates in the younger women is lower because of the physical activity associated with child feeding and rearing

In the dual nutrition burden era, there are large intra-family differences in nutritional status between under-five children, their mothers and other women belonging to the family

It is therefore important to assess nutritional status of each



Thank You