

INTRA-FAMILY DIFFERENCES IN NUTRITIONAL STATUS

Honey Kumari

**SECOND DR. C. GOPALAN MEMORIAL WEBINAR
1ST OCTOBER 2021**

NUTRITION & HEALTH STATUS OF INDIANS IN SEVENTIES

If self-sufficiency in food grain production is used, India has been food secure from mid-seventies.

But

- ✿ Over 70% of India's population were poor
- ✿ They spent over 70% of their income on food
- ✿ Despite this expenditure, over 70% of were under-nourished
- ✿ Access to essential health care was low
- ✿ Morbidity and mortality rates were very high

India realised that mere self-sufficiency in food grain production at national level will not improve household food security or nutritional status of individuals

Better access to subsidised food grains, nutrition, health and family planning services are essential

Access to health care for treatment of morbidity will improve nutritional status in children

MULTI-PRONGED INTERVENTIONS FOR FOOD SECURITY

To Improve Household Food Security:

- ⑩ improve purchasing power: employment programme
- ⑩ direct or indirect food subsidy: supply of subsidized food grains through Public Distribution system

To improve dietary intake of vulnerable groups:

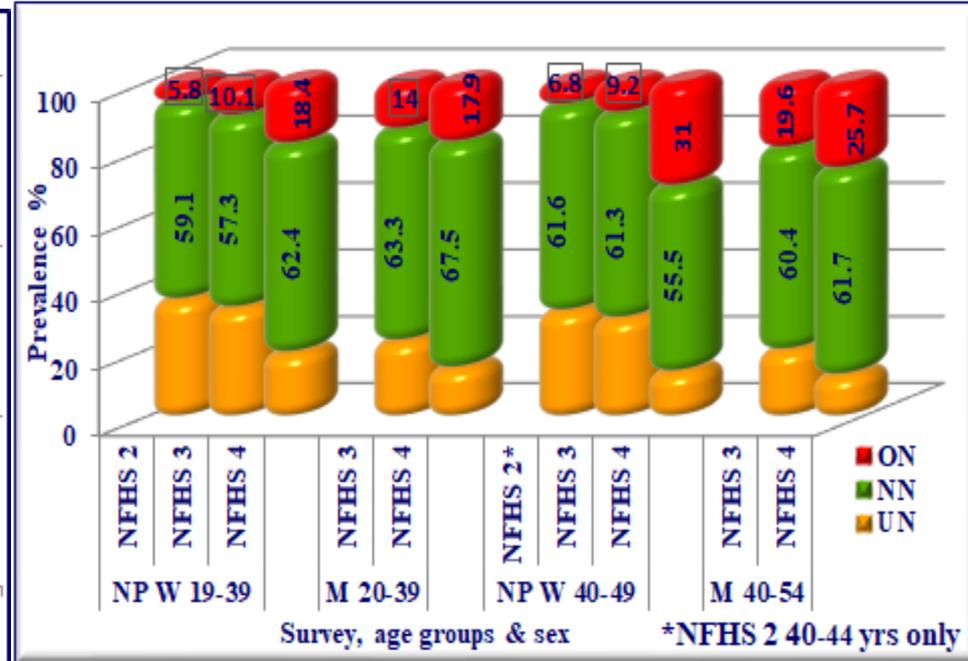
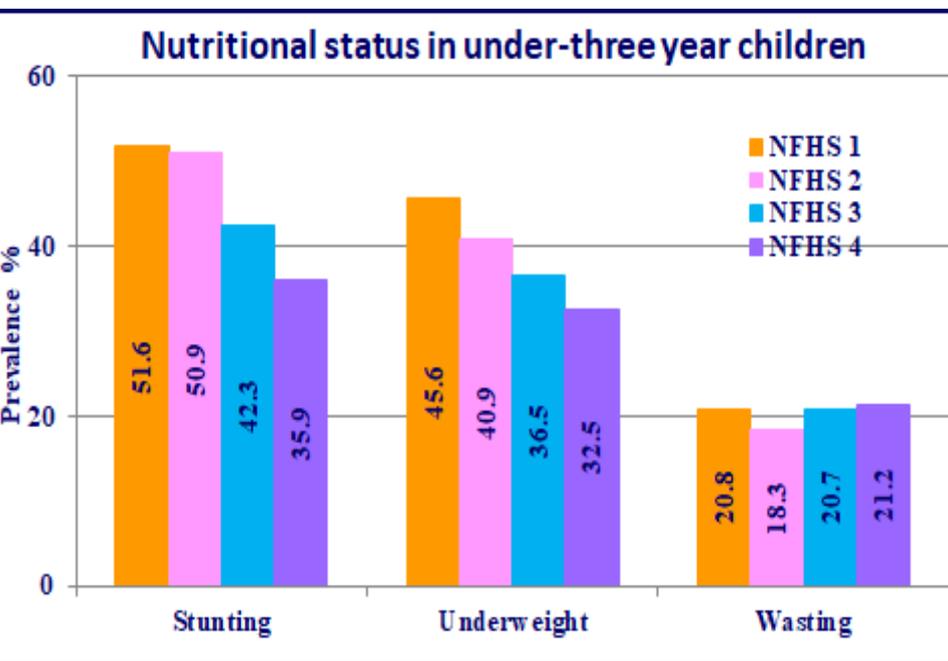
- ⑩ food supplementation programmes through ICDS
- ⑩ school Mid Day Meals programme.

To reduce nutrition toll of infections

- ⑩ improvement in immunization
- ⑩ access to essential primary health care for women & children

All these programmes tried to identify poor households and deliver comprehensive financial, food and health care intervention to these families especially the vulnerable segments.

TIME TRENDS IN NUTRITIONAL STATUS



Data from NFHS indicate that over time there was:

- a slow but steady decline in the prevalence of under-nutrition in pre-school children; prevalence of overnutrition in preschool children is low
- a decline in prevalence of undernutrition in women
- since nineties a slow but progressive increase in over-nutrition occurred less in children more in adults especially in women
- Currently 1/5th of women in 19-39 years are either under- or over-nourished

Numerous studies have documented that in all income groups there has been:

- a steep reduction in physical activity**
- Change to sedentary life style**

In some segments of the population there has been an increase in habitual consumption of energy dense snacks and soft drinks

As a result the country is witnessing an increase in over-nutrition across all segments of population in all age groups

Studies from India have documented that currently under-nutrition & over-nutrition are seen in the same family irrespective of the income group to which they belong.

A community based study was taken up in urban low and low middle income group families to assess and document the extent of intrafamily differences in nutritional status in food secure urban low middle income group families and explore the implications of the findings in terms of modification of the ongoing programmes to improve nutritional status

The study was undertaken in South Delhi ICDS blocks.

The following details were collected from families who were willing to participate in the study

- **Sociodemographic profile of the families**
- **food security status of the family using:**
 - **the per capita purchase method used by NSSO surveys and**
 - **Per capita intake of food, based on the food cooked for the family members on the previous day used by NNMB surveys**
- **Nutritional status of the adults and children in the family**
- **Intrafamily differences in nutritional status**

Based on these data, the extent of concordance in nutritional status between all members of the family was computed

SOCIO-DEMOGRAPHIC PROFILE OF THE FAMILIES

- Majority were nuclear families (58.55%) with five or less members.
- Majority of fathers (74.1%) and mothers (56.3%) had secondary school education.
- Majority of the fathers were semi-skilled workers (60.2%); 1/5th worked in white collar jobs.
- Over 93.6% of mothers were home makers.
- Over 81.1% of households lived in brick and mortar buildings; 45.7% owned their houses; the rest were mostly migrant labourers who lived as tenants in one or two room tenements.
- Over 77.8% had access to piped water supply at home or in the near vicinity and access to flush toilets either in their own home or shared with other households.
- For cooking almost all used Liquefied Petroleum Gas (LPG) and stainless steel utensils.
- Over 96.8% owned colour TV, which was their main source of entertainment.

These families stated that they

- belonged to low middle income group and were food secure;
- had adequate earning to meet the essential requirements of shelter, household possessions, education of children and health care but;
- because of urban housing constraints, they lived in one or two room tenements in over-crowded localities.

COMPOSITION OF THE FAMILY

Composition of family	Total no.
No. of families studied	5148
Under 5 children	6539
Children 5-9 year of age	734
Children 10-18 year of age	376
Mothers	5303
Fathers	636
Other Women in the family	1288
Other Men in the family	465

Majority of families had 4-5 members.

In women information on physiological status was also collected

Based on these information number of consumption units in the family was computed and used to assess food security status of the family

FOOD SECURITY STATUS OF THE FAMILY

To assess family food security status information on:

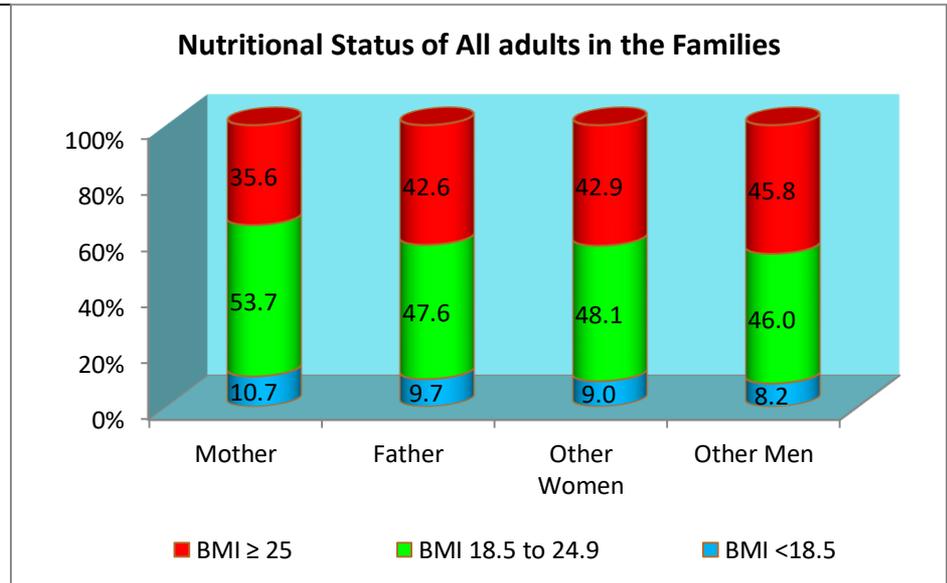
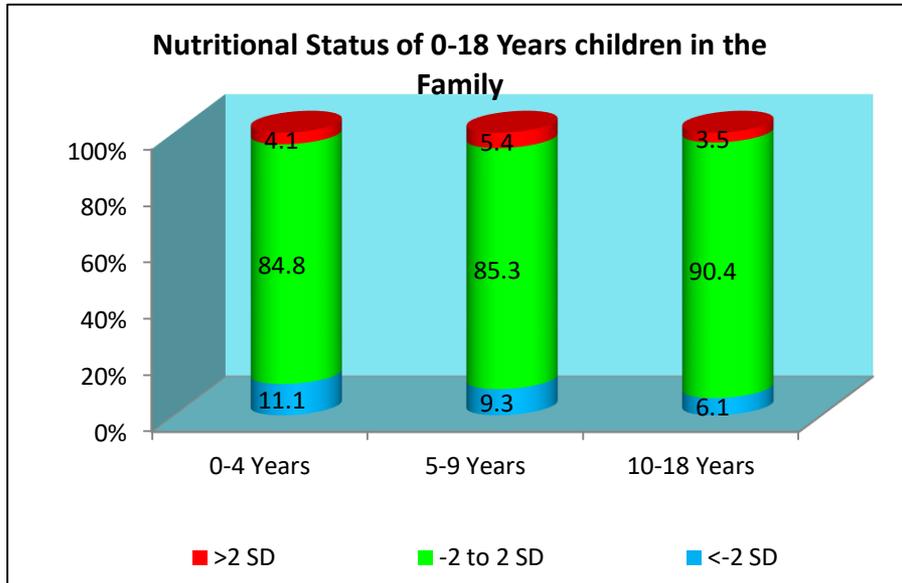
- various food stuffs purchased by the family (daily, twice a week, weekly fortnightly or monthly) was obtained from the family (NSSO survey method) .
- the type and amount of ingredients used for cooking meals for the family on the previous day was collected (NNMB survey method)
- the age and physiological status of all the members of the family

Based on these data, the intake of carbohydrates, protein fats and total energy/ consumption unit (Reference sedentary man) was computed and compared with nutrient requirements of Indians.

Majority of families consumed adequate energy for their optimal weight, physical activity and life style.

Macronutrient intake				
	Carbohydrate	Protein	Fat	Energy
Amount Purchased [Quantity(g/ml)/CU/day]	299.6±80.14 (547)	62.2±19.46 (547)	67.7±25.17 (547)	1978.4±522.54 (547)
Raw Food Cooked Yesterday[(g/ml)/CU/day]	280.7±101.37 (547)	59.5±27.15 (547)	61.5±28.72 (547)	1841.9±631.52 (547)

NUTRITIONAL STATUS OF ADULTS & CHILDREN IN THE FAMILY (BMI FOR AGE IN CHILDREN AND BMI FOR ADULTS)



BMI-for-age in children and BMI in adults were used in order to ensure comparability of the indicator used for assessment

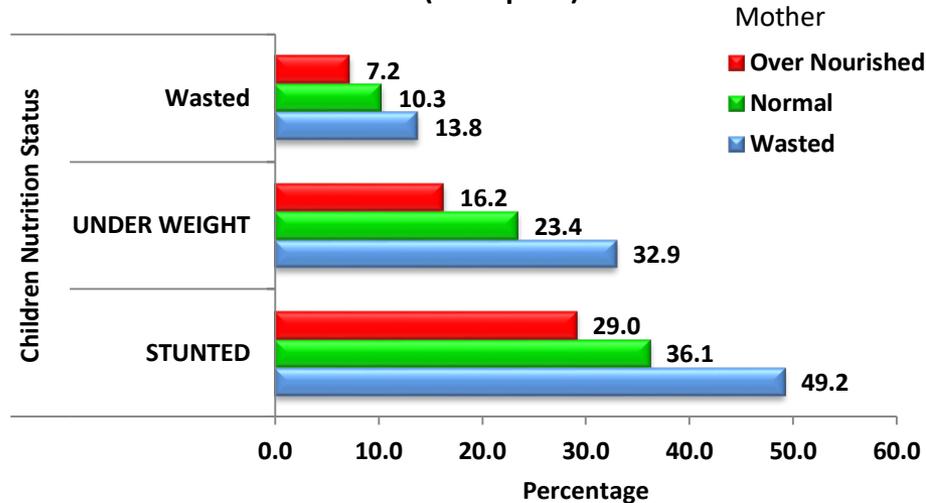
Wasting rates were low both in children and in adults.

Over-nutrition rates were low in children.

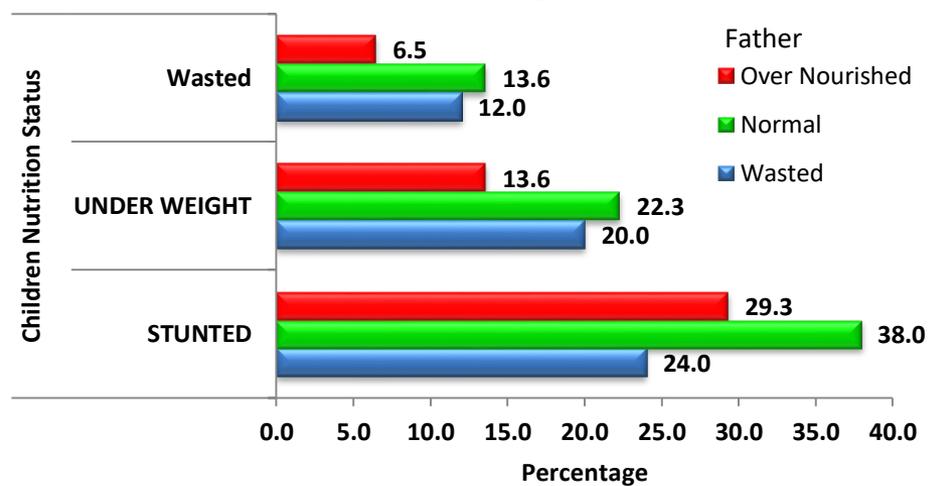
Over-nutrition rates were high both in men and women

Over-nutrition rates in mothers was lower as compared to over-nutrition in the other adult group in the family.

Effect in Maternal Nutrition Status on Child Under-nutrition (6539 pairs)

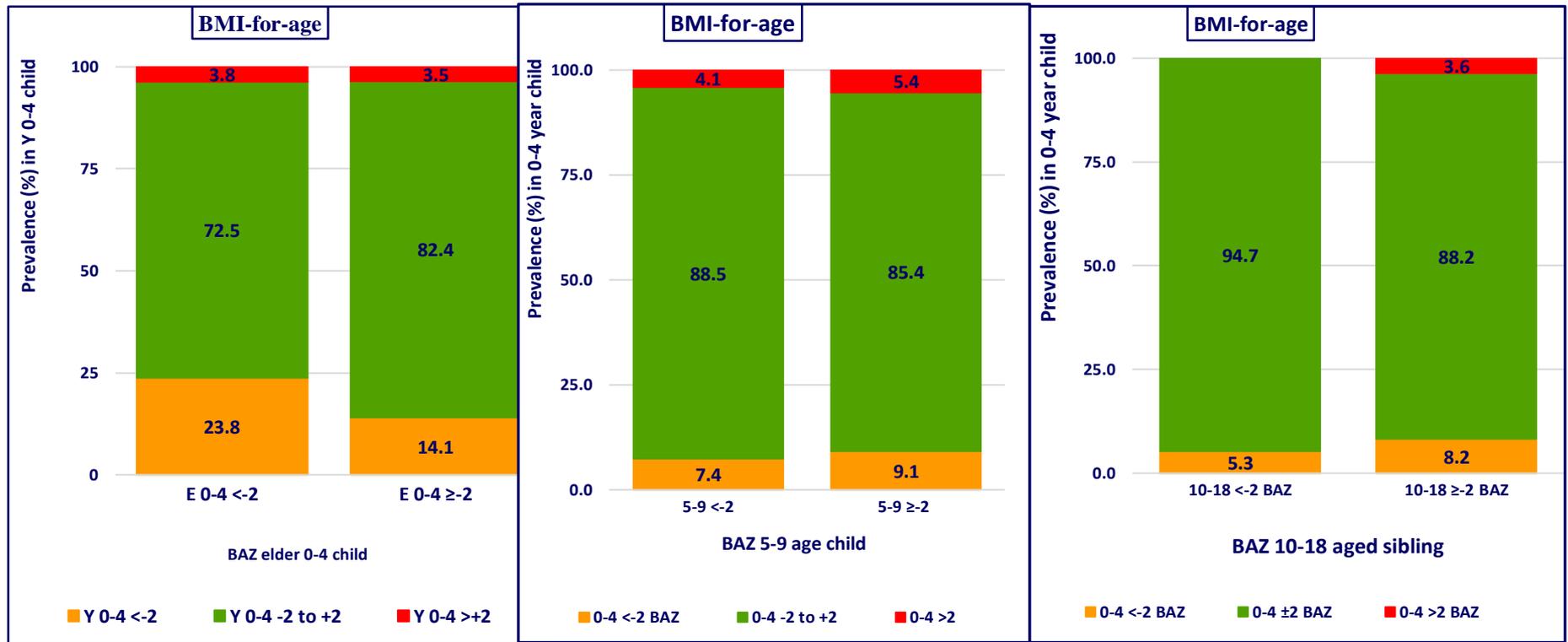


Effect in Paternal Nutrition Status on Child Under-nutrition (636 pairs)



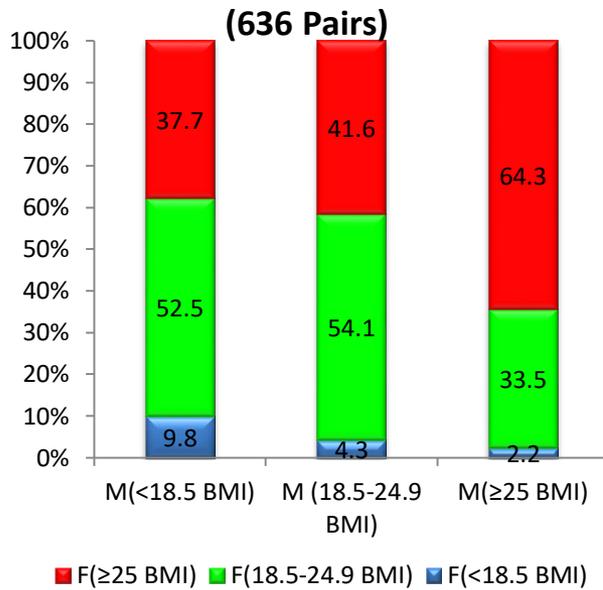
- Stunting, underweight and wasting rates in children were highest when the mothers were under-nourished and least when the mother was over-nourished. However even when the mother was under-nourished 13.8% of the pre-school children were wasted and around 86% were normally nourished.
- There was no gradient between paternal BMI and nutritional status of the child. Even when the father was under-nourished only 12% of the pre-school children were wasted and over 88% were normally nourished.
- Under-nutrition rates in children (stunting, underweight and wasting) were higher when mother or father was under-nourished but majority of children were normally nourished even when parents were under-nourished.
- conversely substantial proportion of children were under-nourished even when parents were normally nourished or over-nourished.

INTRAFAMILY DIFFERENCES IN NUTRITIONAL STATUS IN CHILDREN

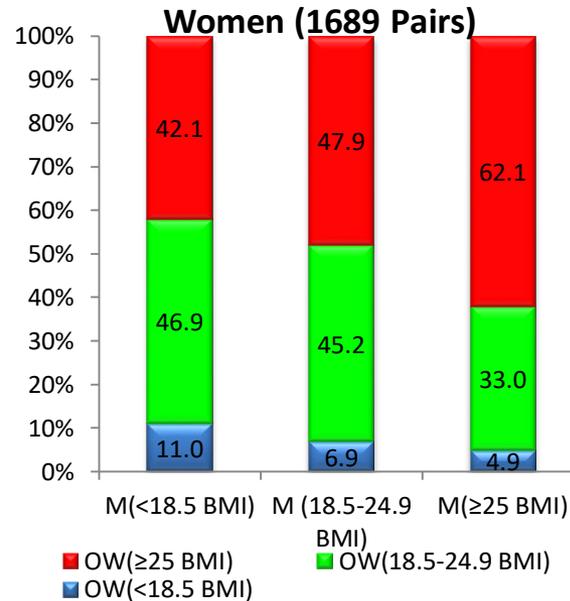


- Irrespective of the age of the elder or younger siblings, if the elder sibling was wasted the prevalence of wasting in the younger sibling was higher.
- This is because the siblings share some of the major factors responsible for under-nutrition in children such as small parental stature, low parental weight, low dietary intake and poor environmental sanitation.
- Majority of the younger siblings of under-nourished elder siblings were not under-nourished and majority of the elder siblings of under-nourished younger sibling were normally nourished.

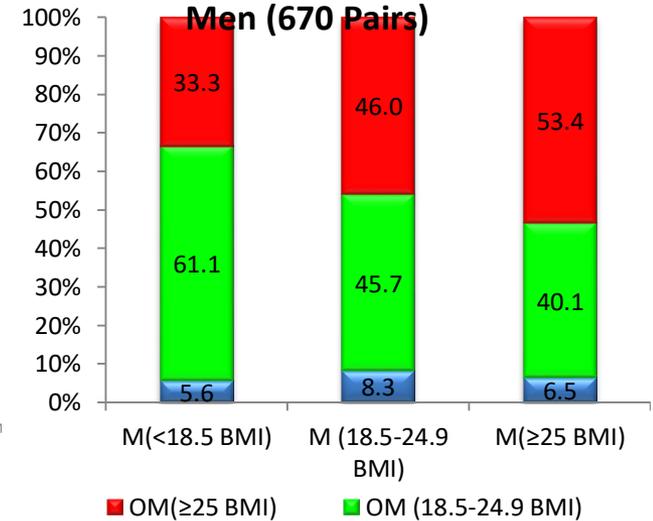
Comparison of Nutritional Status of Mother and Father



Comparison of Nutritional Status of Mother and Other Women (1689 Pairs)

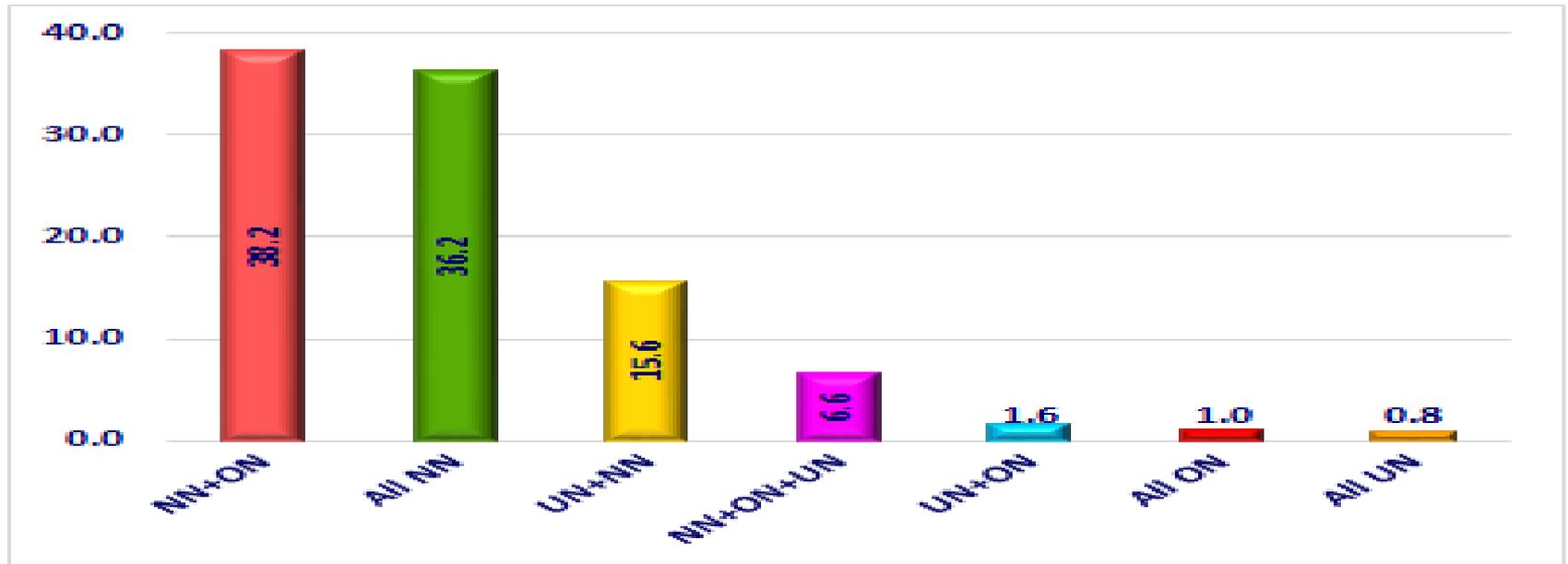


Comparison of Nutritional Status of Mother and Other Men (670 Pairs)



- **Comparison of the nutritional status of mothers and fathers (as assessed by BMI) showed that the prevalence of under-nutrition in fathers was higher if the mother was under-nourished.**
- **Prevalence of over-nutrition in fathers was higher if the mother was over-nourished.**
- **Even if the mother was under-nourished more than one-third of the fathers were over-nourished.**
- **Even when the mother was over-nourished about 2% of the fathers were under-nourished.**
- **Similar trend seen when comparison of nutritional status of mother and other women , father and other men and other men and other women .**

COMPARISON OF NUTRITIONAL STATUS OF ALL FAMILY MEMBERS



Based on the data on nutritional status as assessed by BMI in adults and BMI for age in children, families were classified into different categories.

All members of the family were normally nourished in over a third of the families.

All members of the family were under-nourished or over-nourished in 1% or less of the families.

In over 60% of families there were differences in the nutritional status of persons in the family: both under- and over-nutrition coexist in the family .

In the context of dual nutrition burden within families, there is a need to add to a component of screening all members of the family to identify and manage both under- and over-nutrition all ongoing programmes to improve nutritional status.

PROGRAMMES FOR COMBATING DUAL NUTRITION BURDEN

ASSESSMENT OF NUTRITIONAL STATUS

- Screen by anthropometry to detect under- and over-nutrition
- Assess dietary intake & physical activity

EFFECTIVE MANAGEMENT OF UNDER AND OVER NUTRITION AND NCD

- Provide appropriate nutrition education & care, monitor improvement
- Assess health problems; provide appropriate and affordable health care

POLICY AND PROGRAMME IMPLICATIONS

The study was taken up to assess whether even in dual nutrition burden era the family could be used as the unit for delivery of nutrition services.

Data from the present study suggest that, the current socio-economic assessment to identify families who require access to free or subsidized nutrition and health services should continue because even now undernutrition rates are high

In addition the existing health and nutrition programmes have to be modified to combat dual nutrition burden with in the family by:

- screening all members of the family - especially the vulnerable segments
- identifying under- or over-nourished persons
- providing them with personalised interventions and
- monitoring the improvement in their nutritional status.

Majority of children and adults in these families are normally nourished.

It is important to inform them that they are normally nourished.

They have to be encouraged to continue their current lifestyles for continued normal nutrition and health status

Thank
you