



Status of Women's Nutrition with special emphasis on Mothers

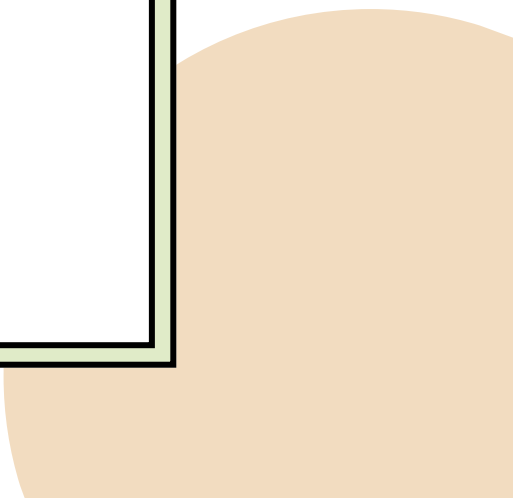
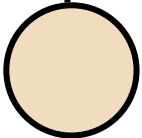
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- A quarter of women of reproductive age in India are undernourished, with a body mass index (BMI) of less than 18.5 kg/m (Source: NFHS 4 2015-16)
- Undernourished girls have a greater likelihood of becoming undernourished mothers who in turn have a greater chance of giving birth to low birth weight babies , perpetuating an intergenerational cycle.

- The major reason for stagnant levels of undernutrition among Indian children is due to in utero undernutrition of the foetus
- 50 per cent of the growth failure that is seen by two years of age occurs in the womb owing to poor nutrition of mother both during pregnancy and before pregnancy.

ANEMIA

Key findings

- Forty-one percent of pre-schoolers, 24% of school-age children and 28% of adolescents were anaemic
- Anaemia was most prevalent among children under two years of age
- Female adolescents had a higher prevalence of anaemia (40%) compared to their male counterparts (18%)
- Anaemia was a moderate or severe public health problem among pre-schoolers in 27 states, among school-age children in 15 states, and among adolescents in 20 states
- Thirty-two percent of pre-schoolers, 17% of school-age children and 22% of adolescents had iron deficiency (low serum ferritin)
- Female adolescents had a higher prevalence of iron deficiency (31%) compared to male adolescents (12%)
- Children and adolescents in urban areas had a higher prevalence of iron deficiency compared to their rural counterparts

Figure 6.2: Prevalence of anaemia by sex among children and adolescents aged 1–19 years, India, CNNS 2016–18

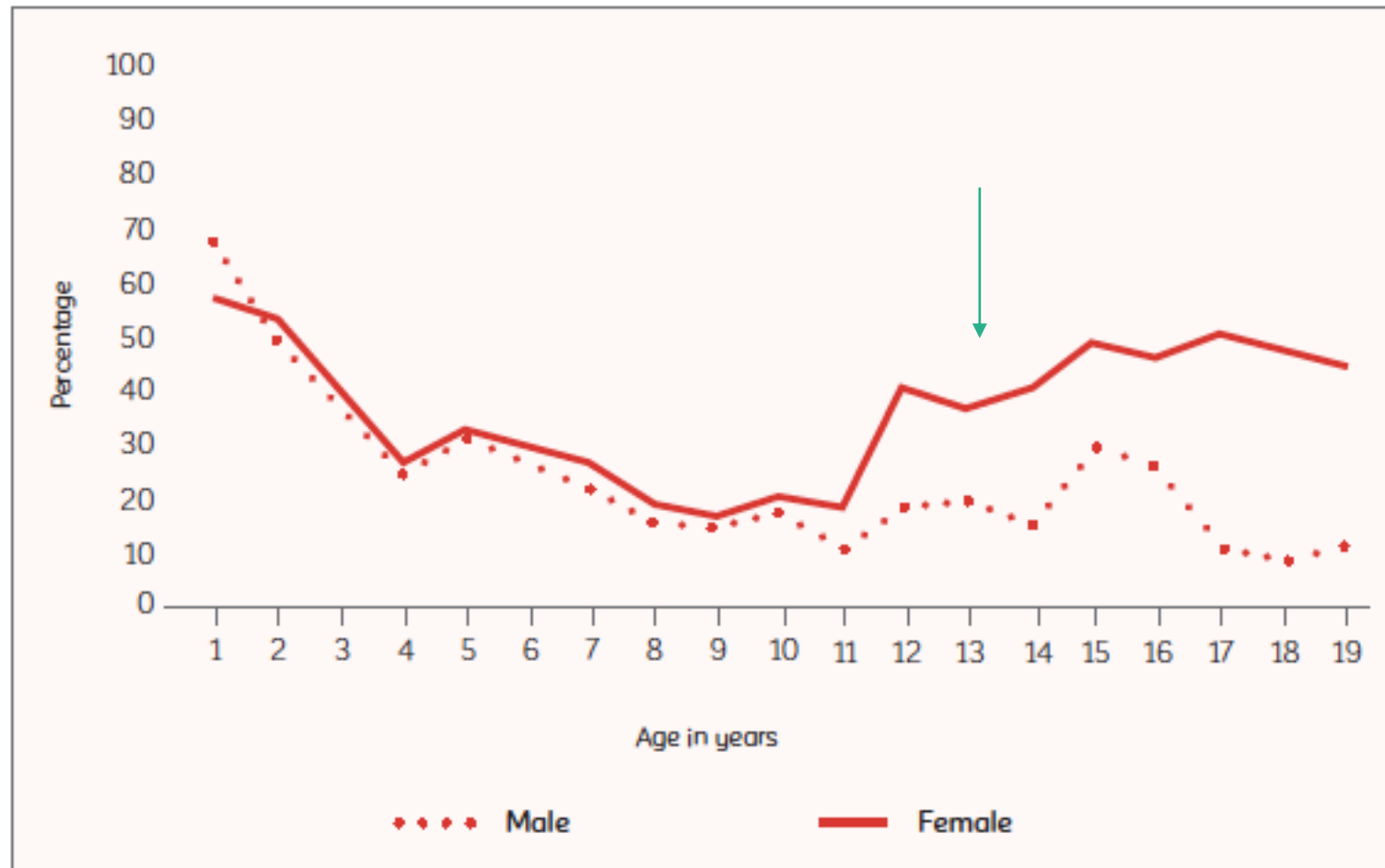


Table 7.3: Percentage of adolescent aged 10–19 years classified as having vitamin A, vitamin D and zinc deficiency by selected background characteristics, India, CNNS 2016–18

Characteristics	Vitamin A deficiency ^a		Vitamin D deficiency ^b		Zinc deficiency ^c	
	Percent	Weighted number	Percent	Weighted number	Percent	Weighted number
Sex of child						
Male	15.7	4361	13.8	6384	35.1	5638
Female	15.5	4495	34.3	6211	28.4	5737

Table 7.9: Percentage of adolescents aged 10–19 years classified as having deficiency of vitamin B12 and Folate by selected background characteristics, India, CNNS 2016–18

Characteristics	Vitamin B12 deficiency ^a		Folate deficiency ^b	
	Percent	Weighted number	Percent	Weighted number
Sex of child				
Male	34.9	5,779	39.3	6,706
Female	26.8	5,661	34.1	6,547

Table 8.2: Percentage of adolescents aged 10–19 years with pre-diabetic and diabetic status by selected background characteristics, India, CNNS 2016–18

Background Characteristics	Pre-diabetic		Diabetic	
	Percent	Weighted number	Percent	Weighted number
Sex of child				
Male	11.4	5,114	0.7	5,114
Female	9.3	4,921	0.4	4,921

Table 8.10: Percentage of adolescents aged 10–19 years with high total cholesterol, high LDL, low HDL and high triglycerides by selected background characteristics, India, CNNS 2016–18

Background Characteristics	High total cholesterol		High LDL		Low HDL		High triglycerides	
	Percent	Weighted number	Percent	Weighted number	Percent	Weighted number	Percent	Weighted number
Sex of child								
Male	3.4	6,582	3.4	6,580	31.5	6,511	14.1	6,587
Female	4.0	6,424	4.2	6,424	24.9	6,408	18.1	6,429

Table 8.17: Percentage of adolescents aged 10–19 years classified as hypertensive by selected background characteristics, India, CNNS 2016–18

Background Characteristics	Hypertensive	
	Percent	Weighted number
Sex of child		
Male	4.7	5,623
Female	5.1	5,301

Pregnancy in
Adolescents
15-19 yrs
(NFHS 4)

Urban – 5%

Rural - 9.2 %

Adult Women BMI

Indicators	NFHS-4 (2015-16)			NFHS-3 (2005-06)
	Urban	Rural	Total	Total
Nutritional Status of Adults (age 15-49 years)				
75. Women whose Body Mass Index (BMI) is below normal (BMI < 18.5 kg/m ²) ¹⁴ (%)	15.5	26.7	22.9	35.5
76. Men whose Body Mass Index (BMI) is below normal (BMI < 18.5 kg/m ²) (%)	15.4	23.0	20.2	34.2
77. Women who are overweight or obese (BMI ≥ 25.0 kg/m ²) ¹⁴ (%)	31.3	15.0	20.8	12.6
78. Men who are overweight or obese (BMI ≥ 25.0 kg/m ²) (%)	26.6	14.3	18.9	9.3
Anaemia among Children and Adults¹⁵				

Adult Women Anemia

80. Non-pregnant women age 15-49 years who are anaemic (<12.0 g/dl) (%)	51.0	54.4	53.2	55.2
81. Pregnant women age 15-49 years who are anaemic (<11.0 g/dl) (%)	45.8	52.2	50.4	57.9
82. All women age 15-49 years who are anaemic (%)	50.8	54.3	53.1	55.3

ENERGY REQUIREMENTS DURING PREGNANCY AND LACTATION

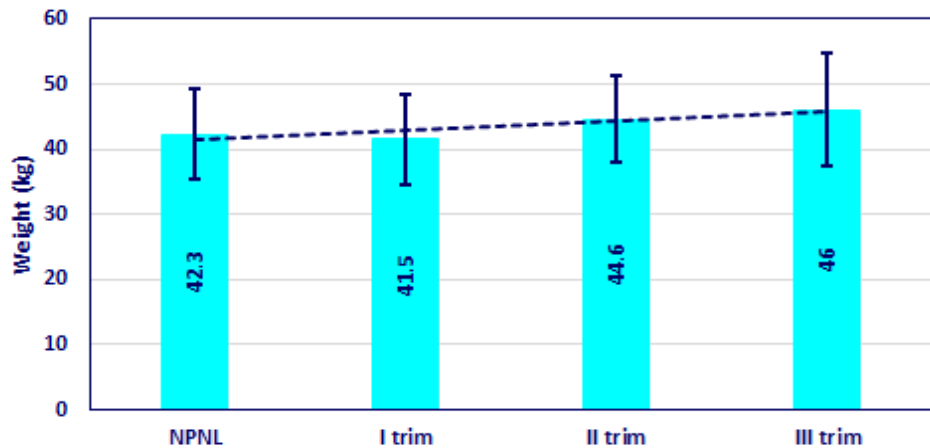


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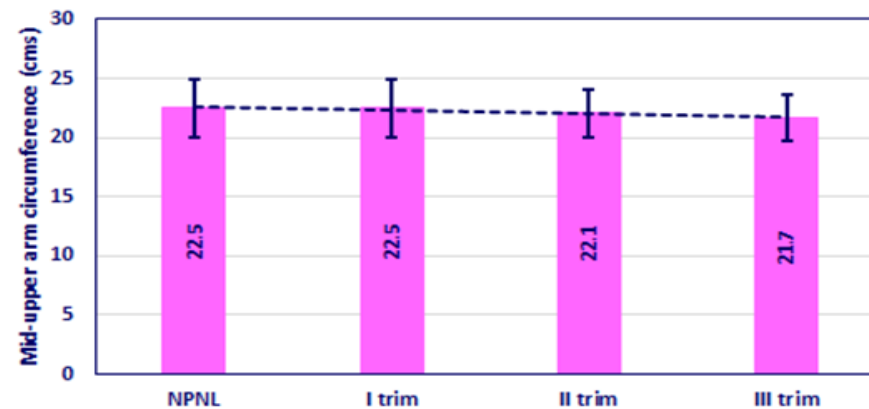
- **Pregnant women nutritionally vulnerable group**
- **When Women gain about 10 kg during pregnancy -- the birth weight of the offspring was 3.1 kg**
- Require additional energy (and other) nutrients to meet the needs:
 - **of the growing infant (especially in the second and third trimester)**
 - **for the physiological changes during pregnancy in the mother**
 - **for carrying out daily activities when she has gained weight.**
- **Recommended additional dietary intake of 300-350 Kcal/day in the second and third trimester of pregnancy.**

**NUTRITIONAL STATUS OF INDIAN PREGNANT WOMEN
NIN 1977-1982**

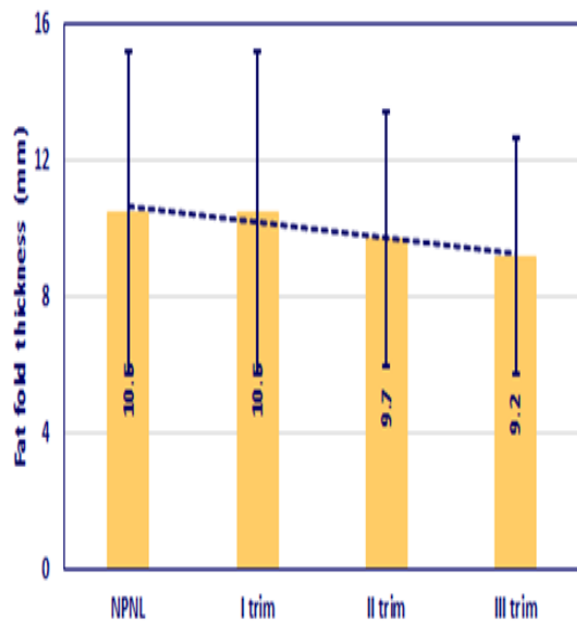
Weight in pregnancy rural LIG NIN 1982



MUAC in pregnancy rural LIG NIN 1982



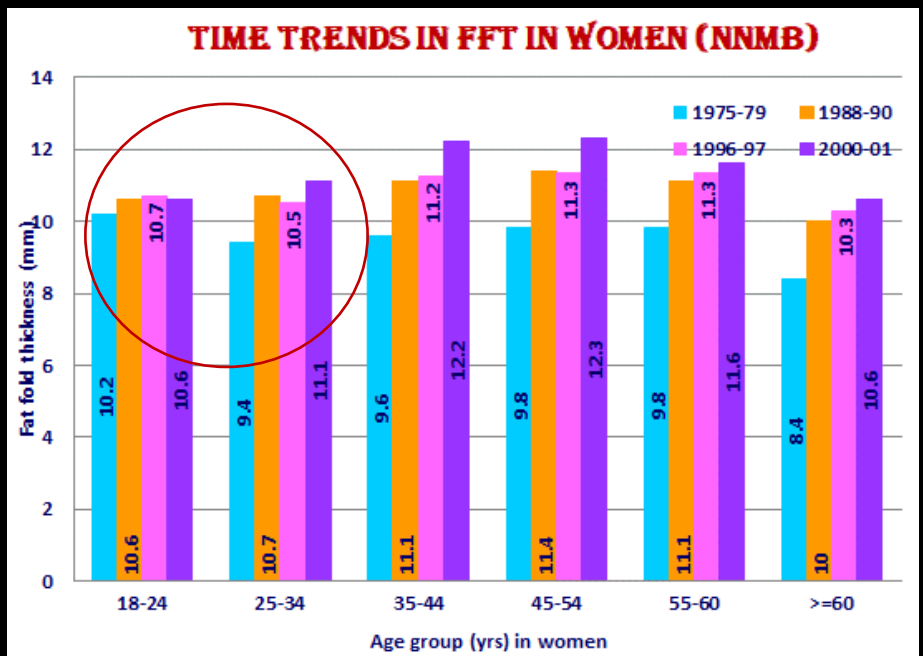
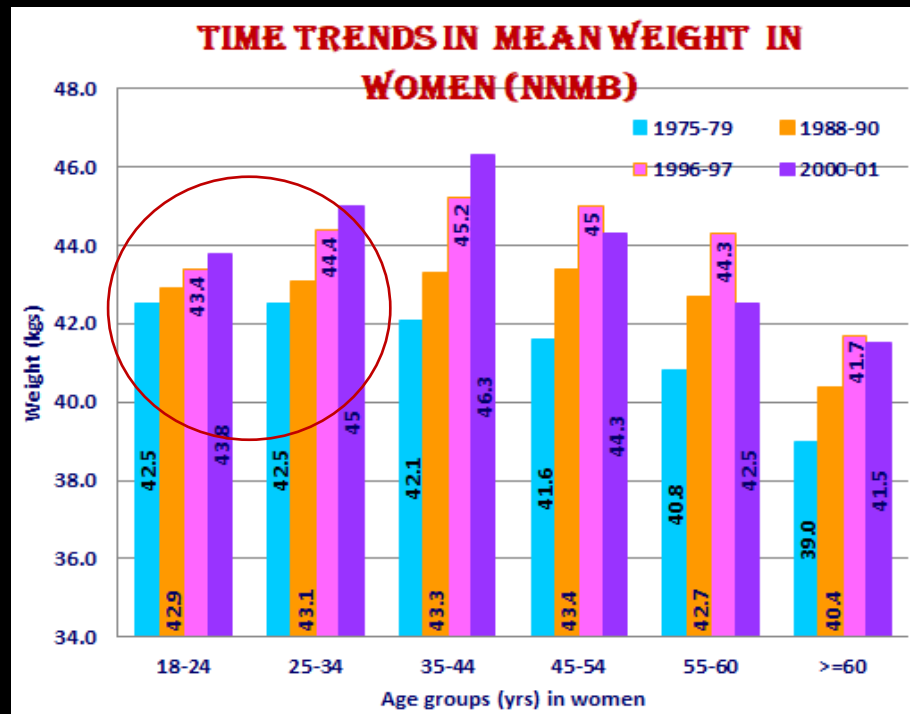
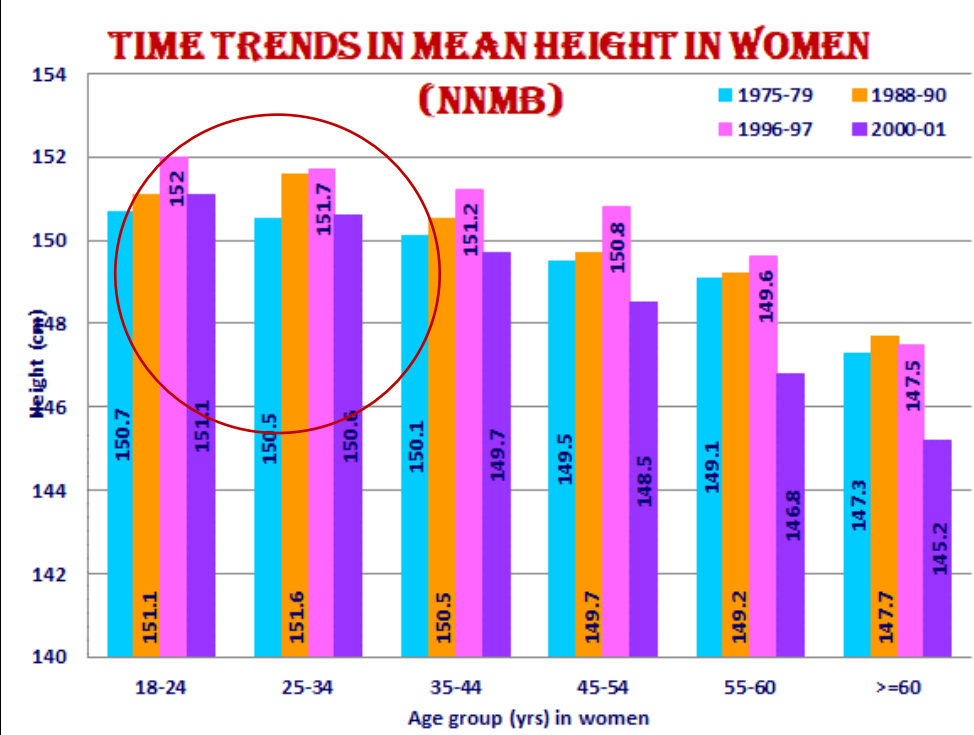
FFT in pregnancy rural LIG NIN 1982



Longitudinal studies in rural low income group women in Hyderabad showed that

- the mean height was 150cm
- 1/3rd were under-nourished prior to pregnancy
- Energy intake ranged between 1200-1600 Kcal
- No difference in energy intake between pregnant and non-pregnant women
- Weight gain in pregnancy was between 4-6 Kg
- There was a reduction in MUAC of 0.8 cm and a reduction in FFT of 1.3mm during pregnancy
- Birth weight was 2.6 kg.

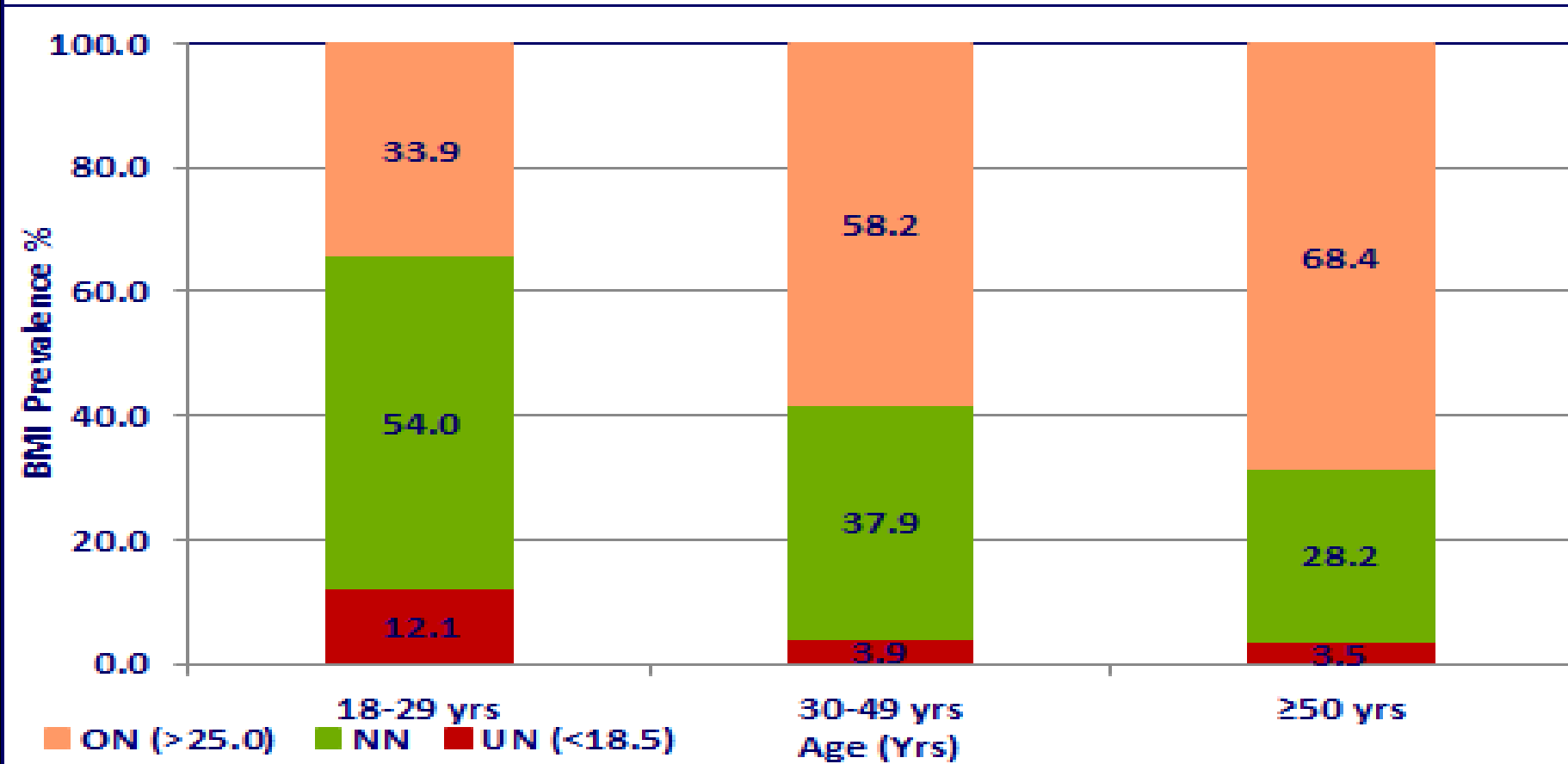
IN THESE WOMEN BODY FAT WAS BEING MOBILISED TO MEET THE ENERGY REQUIREMENTS DURING PREGNANCY



NUTRITION TRANSITION IN WOMEN

IN THREE DECADES WOMEN GAINED ABOUT 2CM IN HEIGHT, FOUR KG IN WEIGHT AND 2-3 MM IN FAT-FOLD THICKNESS.

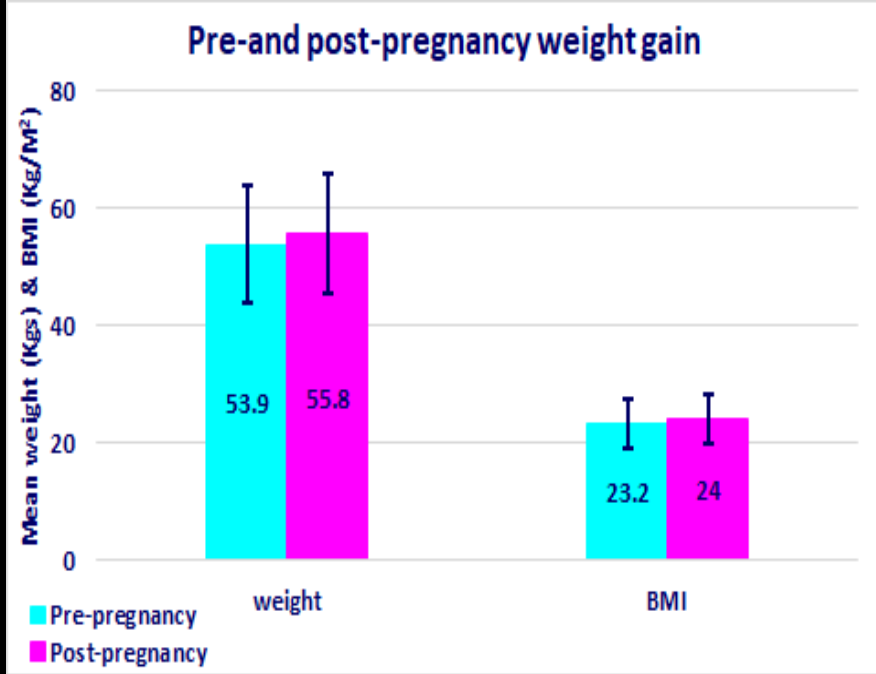
Nutritional status of women in relation to age



Studies carried out by NFI in **urban low middle income** group of women showed that in the 18-29 year age group prevalence of under-nutrition was low (1 in 6) but one-third of the women were over-nourished.

With increasing age over-nutrition rate showed further steep increase and over 2/3rd of women above 50 years were over-nourished.

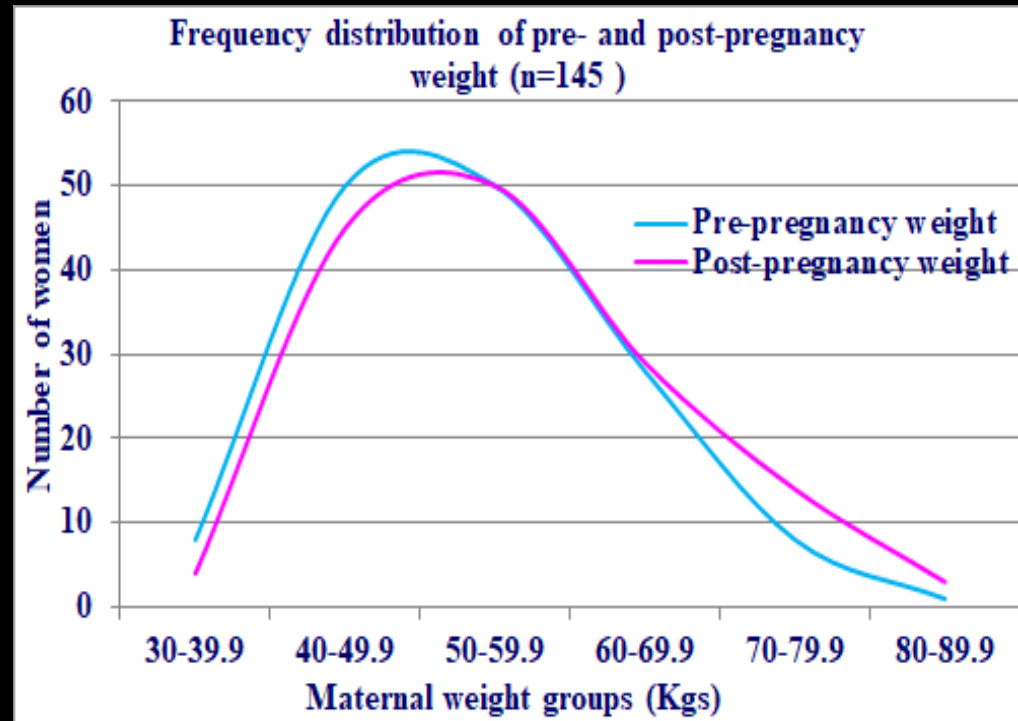
**NFI'S STUDIES ON PREGNANCY WEIGHT GAIN BIRTH WEIGHT
AND RESIDUAL PREGNANCY WEIGHT RETENTION**



Even when weight gain during pregnancy was <8 Kg, there was a significant residual weight gain of 2 kg in the post-pregnancy period.

Residual weight retention after pregnancy was seen across all maternal weight groups.

Weight retention is beneficial in under-nourished women but detrimental in overweight women.

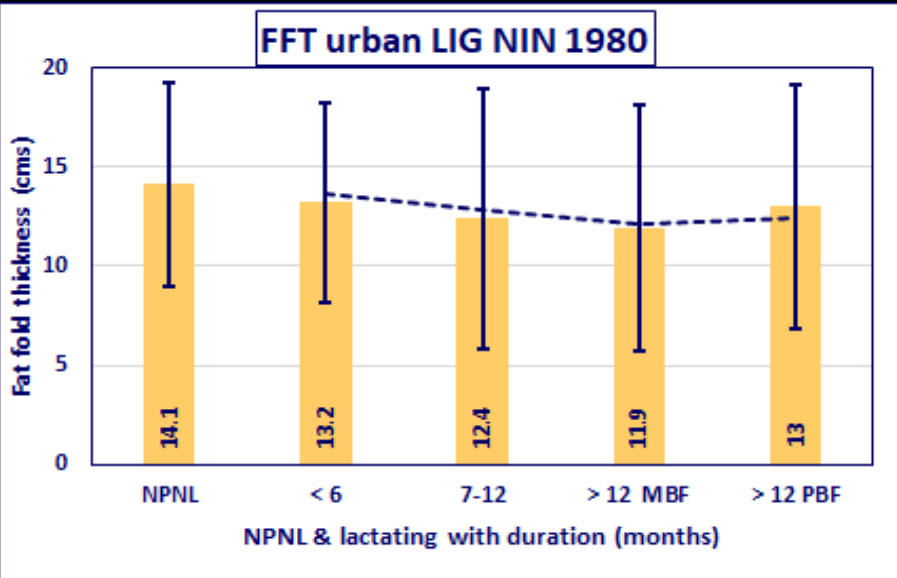
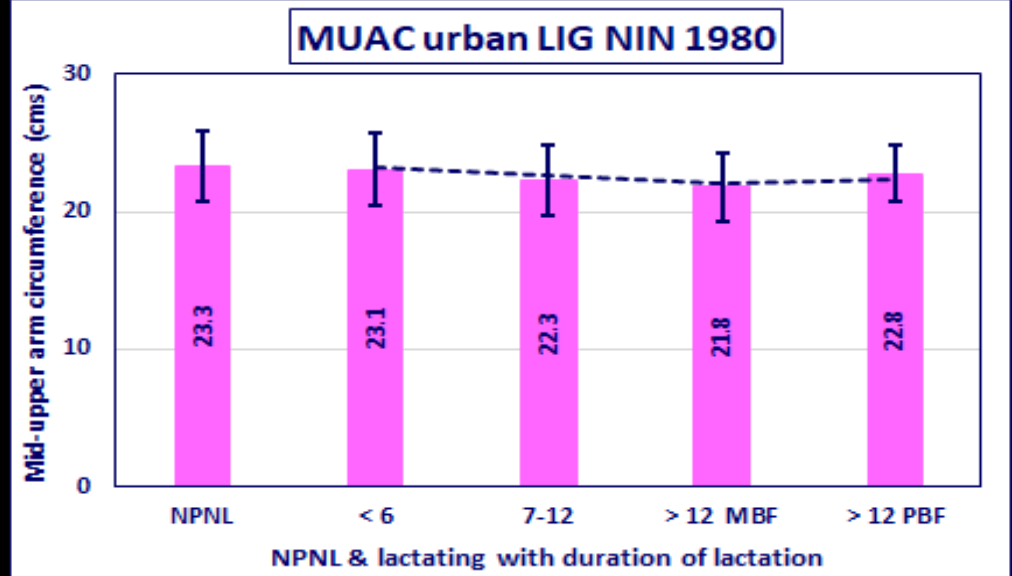
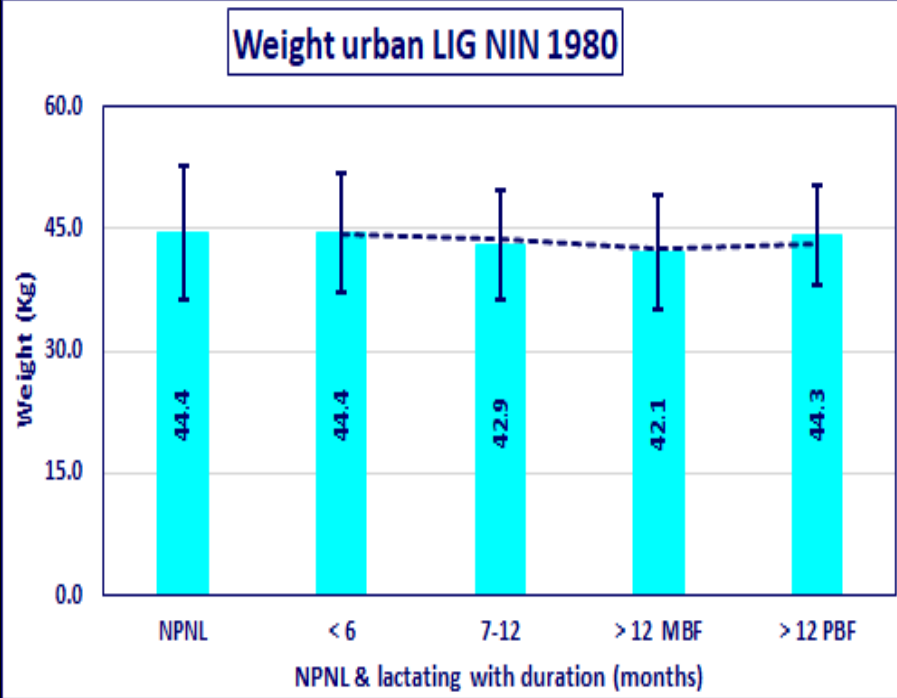


POLICY AND PROGRAMME IMPLICATIONS

TO ACHIEVE OPTIMAL WEIGHT GAIN IN PREGNANCY AND OPTIMAL BIRTH WEIGHT, IT IS ESSENTIAL TO IDENTIFY UNDERWEIGHT AND OVERWEIGHT WOMEN AND PROVIDE APPROPRIATELY TAILORED ADVICE REGARDING DIETARY INTAKE AND PHYSICAL ACTIVITY DURING PREGNANCY.

Since 1970s global and national recommendations for dietary allowances have used factorial approach and recommended additional dietary intake of 500 Kcal/day during lactation.

**NUTRITIONAL STATUS OF INDIAN LACTATING WOMEN
NIN 1977-1980**

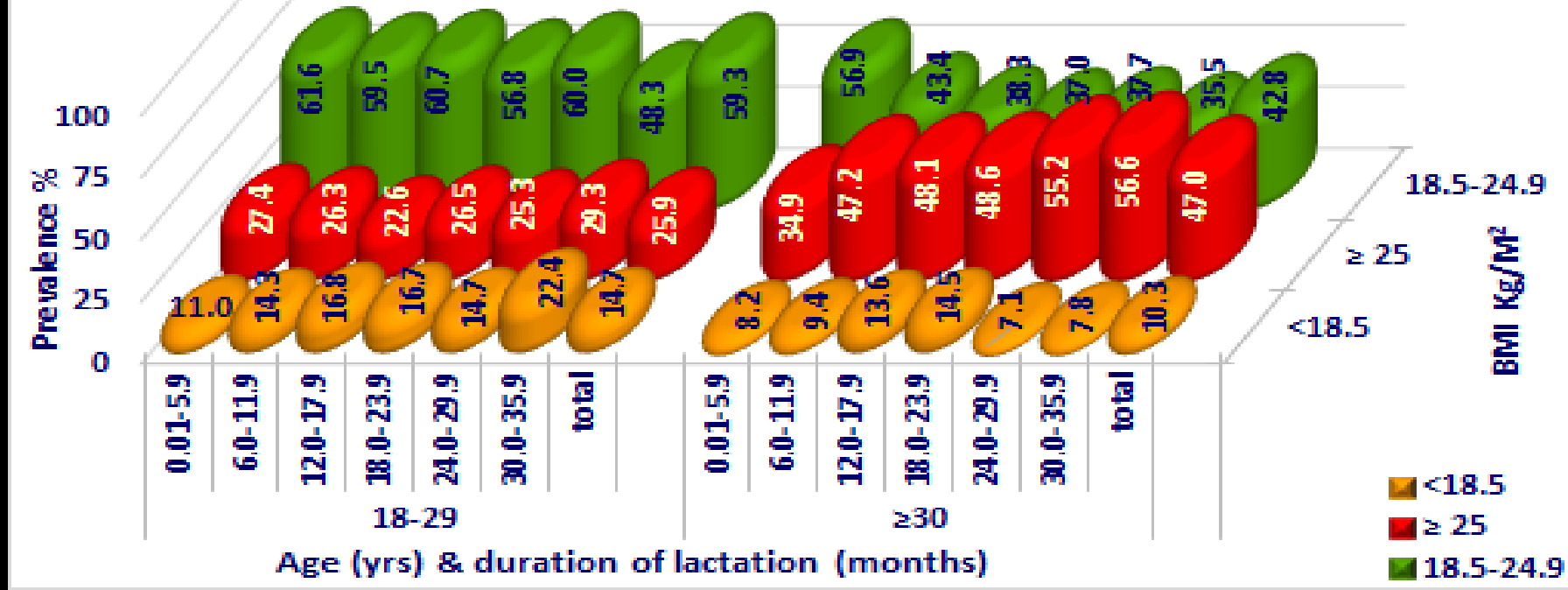


Studies in lactating women from urban low income group women in Hyderabad showed that:

- During the first year of lactation there was weight loss of 1.5 kg and reduction in MUAC and FFT.

IN THESE WOMEN BODY FAT WAS BEING MOBILISED TO MEET THE ENERGY NEEDS DURING THE FIRST YEAR OF LACTATION

CHANGES IN NUTRITIONAL STATUS (BMI) IN RELATION TO DURATION OF LACTATION



In lactating women aged 18-29 years:

- Under-nutrition and Over-nutrition rates unchanged with varying duration of lactation
- Over-nutrition rates showed increase with waning lactation

POLICY AND PROGRAMME IMPLICATIONS

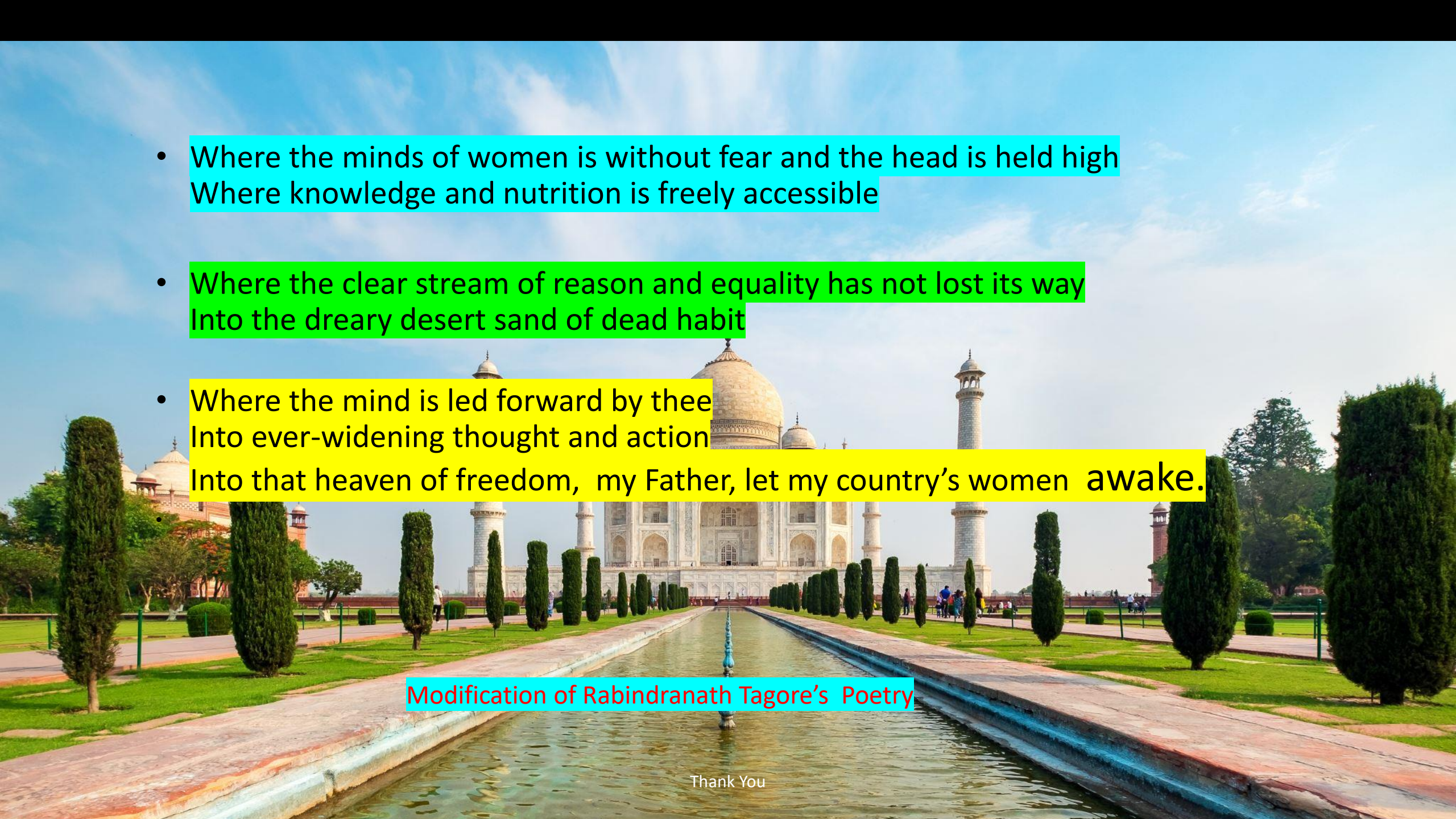
IT IS ESSENTIAL TO IDENTIFY UNDERWEIGHT AND OVER WEIGHT WOMEN AND PROVIDE APPROPRIATELY TAILORED ADVICE REGARDING DIETARY INTAKE DURING LACTATION.

Impact of COVID 19 on Women's Health-1

- Access to health care was difficult – Possible impact on Maternal and Child morbidity and mortality
- Possibly a Dutch Famine Like impact- Need follow up of all babies born / conceived during this period

What needs to be done

- Nutrition Security
- Health care access
- Independence and social security
- Equal access to work and pay
- Uninterrupted education

- 
- Where the minds of women is without fear and the head is held high
Where knowledge and nutrition is freely accessible
 - Where the clear stream of reason and equality has not lost its way
Into the dreary desert sand of dead habit
 - Where the mind is led forward by thee
Into ever-widening thought and action
Into that heaven of freedom, my Father, let my country's women awake.

Modification of Rabindranath Tagore's Poetry