



## A study of dietary assessment and factors affecting it among pregnant women attending antenatal clinic in a tertiary care centre in Jamnagar, Gujarat.

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**ABSTRACT**

Although various antenatal services provided, undernutrition during pregnancy is still a major health issue. Now days nutritional research has reached micro nutrient levels yet translation of these researches have not reached to the community. Still there is no visible difference between past and present nutritional status of antenatal women. Therefore, this study is carried out to understand the dietary pattern of pregnant women and factors related with adequacy of nutrient intake. A cross sectional study was conducted among pregnant women attending antenatal clinic of tertiary care hospital.

Results: mean calorie intake of the women was very low i.e.  $1606.67 \pm 480.48$  kcal/day and the mean protein intake i.e.  $44.33 \pm 14.43$  gm/day. Occupation of husband, size of family and no of children have positive impact on woman's adequate calorie status.

**KEYWORDS : dietary pattern, pregnant women, food fads****Introduction:**

Despite emphasis on antenatal services provision through various health programmes & policies to improve mother and child health, undernutrition is still a major health concern in many developing countries. In India, about 1/3<sup>rd</sup> women of reproductive age group are undernourished and more than 60% are anemic.<sup>(1)</sup> Maternal health status during pregnancy and nutrition is a strong determinant of health and survival of foetus in utero & the child post-birth. Maternal nutrition is influenced by many biological as well as socio-cultural factors inherent in local community that affect women's dietary habit and pattern. Taking these facts into consideration, this study aims to explore prevailing dietary pattern of pregnant women and various factors affecting this dietary pattern in local community of Jamnagar district.

**Aims and objectives:**

- To assess dietary intake and pattern of antenatal women through detailed dietary assessment.
- To find out impact of various socio-cultural factors on dietary pattern of pregnant women.
- To identify food fads related with diet during pregnancy.

**Material and methods:**

The study was conducted on pregnant females attending antenatal counselling clinic in Guru Gobind Singh Hospital of Jamnagar district in western part of Gujarat state during July to September 2011. The hospital is a government tertiary care centre attached with a medical college. The estimated sample size was 281 based on the prevalence of under-nutrition being 36% among reproductive age women<sup>(1)</sup>. A pretested semi structured questionnaire was used to interview women, who were chosen for the study using systematic random sampling technique. Therefore every 4<sup>th</sup> pregnant women attending the clinic were taken for the study in total study period. For the study, Prior consent was taken from them. 24hr recall method was used in oral questionnaire to check the diet consumption and quantitative analysis of the diet and food frequency table was used to find the weekly consumption of some important food items. Food fads during pregnancy were also asked. At the end of study period, we could study 321 women thus

final sample size was 321.

**Results:**

Majority of women were from urban slum area attending the clinic. More than half of the women were in 20-25 years of age group with mean age of women was  $23.94 \pm 3.47$  years. Majority of women were Hindu and about 3/4<sup>th</sup> of women from joint family and about 9 out of 10 females were from lower social class.

Required calorie of pregnant female is 2580 kcal/day and protein requirement is 78gm/day.<sup>(2)</sup> Rao KM stated that according to ICMR guidelines 70% of RDA of calorie and protein requirement is considered as adequate.<sup>(3)</sup> Therefore, for pregnant females, 1806 kcal/day and 54.6gm/day protein is taken as adequate. In our study 29% women were taking adequate calorie intake and only 19.3% women were taking adequate protein intake in their daily diet. Also, mean calorie intake of the women was very low i.e.  $1606.67 \pm 480.48$  kcal/day and same for the mean protein intake i.e.  $44.33 \pm 14.43$  gm/day.

**Table 1: socio-demographic profile of antenatal women**

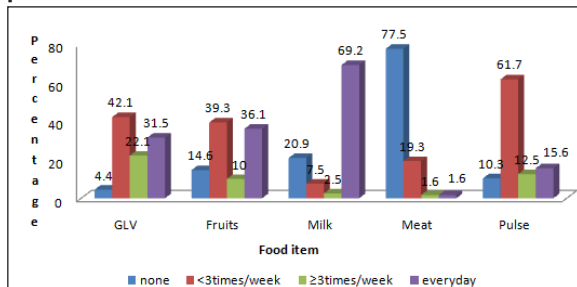
Characteristic	Frequency (Percentage)
<b>Residence</b>	
Urban	41 (12.8%)
Urban slum	183 (57%)
Rural	97 (30.2%)
<b>Age</b>	
<20 yrs	54 (16.8%)
20-25 yrs	190 (59.2%)
25-30 yrs	65 (30.2%)
>30 yrs	12 (3.7%)
<b>Religion</b>	
Hindu	267 (83.2%)
Muslim	54 (16.8%)
<b>Type of family</b>	
Joint	242 (75.4%)

Nuclear	79 (24.6%)
<b>Socio-Economic class</b>	
High	30 (9.35%)
Low	291 (90.65%)
<b>Gravida</b>	
1	144 (44.9%)
2	117 (36.4%)
≥3	60 (18.7%)

Chart 1 explores the food frequency of some important food items on weekly basis. Only 15.6% women were taking pulses every day, 31.5% women take green leafy vegetables, 69.2% milk, 36.1% fruits and only 1.6% meat in their daily diet. While 72% women were taking pulses in less than 3 times per week or not taking at all. 46.5% women take green leafy vegetables, 28.4% milk, 54.9% milk for less than 3 times per week or not taking at all.

Food fads related to pregnancy were also explored. Women considered Jaggery, papaya, chikoo, bajara, brinjal, onion, pickles, bhindi and also non-vegetarian foods like eggs, meat and fishes as hot foods and abortifacient. They believe that Citrus fruits, lemon, curd, buttermilk, mango causes swellings of hands and legs. Due to food like Ghee, banana, chikoo, foetus sticks in uterus. Women believe that if they eat milk and ghee during pregnancy, there will be complication & problem in normal delivery due to big baby.

**Chart 1: chart showing food frequency of each food item per week**



**Table-2 factors associated with calorie and protein adequacy**

Factors	Groups	Adequate calorie intake (percentage)	P value	Adequate protein intake (percentage)	P value
Education of females	Up to primary	23.3%	> 0.05	11.7%	>0.05
	More than primary	30.3%		21.1%	
Family members	Up to 5	33.9%	<0.05	20.7%	>0.05
	More than 5	23.1%		17.7%	
Social class	Higher	40%	> 0.05	30%	> 0.05
	Lower	27.8%		18.2%	
Occupation of husband	Business	45.8%	<0.05	29.2%	>0.05
	Farmer	44.7%		23.4%	
	Service	39.1%		18.4%	
	Labourer	25.7%		12.5%	
	Self employed	12.5%		21.7%	
Gravida	Up to 2	32.2%	<0.05	21.5%	<0.05
	More than 2	15%		10%	

Various factors were explored to find the relation with females' calorie and protein intake. It was found that women with family members less than 5 had more adequate calorie intake as compared to larger fam-

ily and the association was statistically significant. Women with husband's occupation like business, farmer or service had adequate calorie intake than women whose husbands were labourer or self employed like driver, painter, carpenter etc. Also significant difference was found between women upto 2 gravida, higher adequate calorie intake than multigravida.

**Discussion:**

Maternal health has direct impact on child's birthweight and overall health status. For the better outcome of pregnancy and getting healthy baby, nutrition is one of the important aspects to

be looked for. But in developing countries like India pregnancy is considered as a neglected part of life and same is true for the diet during pregnancy. People do not appreciate the importance of healthy and nutritious diet during pregnancy as well as in lactation period. Women cannot cope up with increasing demand during this stage and becomes more malnourished and also having various micronutritional deficiency like anaemia which has high prevalence of 50-75% in India. (NFHS-3)

Many studies had been done worldwide that show the relationship between low birthweight babies and undernutrition of mother prior to and during pregnancy. Karmer MS in the study found that modest increase in foetal growth is resulted due to balanced increase in energy and protein intake during pregnancy. (4) Meriardi M et al in their study about systemic review of balanced protein and energy supplementation showed 32% reduction in small for gestational age babies. (5) Wu J et al in the study concluded that maternal undernutrition during pregnancy can impair fetal growth. (6)

The adequacy of calorie and protein intake was found very low in our study; only one out of three women is taking adequate calorie intake and only one out of five women is taking adequate protein intake. Similar finding was found in the study done by Saxena V et al., 29.5% and 24.5% women were taking inadequate calorie and protein intake respectively. (7) The mean intake of calories in our study was 1606.67±480.48 kcal/day and the mean protein intake was 44.33±14.43 gm/day. While Rao KM et al in their study found that the average intake of calories in pregnant females were 1654kcal/day in rural area and 1773 kcal/day in tribal area and average protein intake was 45gm/day in rural and 43gm/day in tribal area. (3)

In our study only 15.6% women take pulses in their daily diet. 36.1% women take fruit daily, 69.2% take milk everyday and 22.5% women eat non vegetarian food like meat at least once a week. While Kanade AN et al in their study in Pune found that 75% women had pulses everyday, 77% women had fruits atleast once a day and 36% were eating non vegetarian more than once a week. (8) these differences in finding of both studies may be due to variation in dietary preferences regionally and culturally.

90.7% women in our study take only two of three meals/ day. While in pregnancy due to increase in calorie and protein requirement, pregnant women should take atleast 5 meals/day that could be the reason for low mean calorie and protein intake of the women. Also, some food fads were identified during pregnant which render pregnant women to take important food items during this period which further contribute in lacking of quality diet during this period. Mehrotra M and Tiwari S also identified these food fads and due to that omission of important food items in diet. (9)

**Conclusion:**

Even if there are various efforts by government for improving maternal and child health related indicators, we are very much lacking behind in achieving them. Now therefore the need is to address the indirect indicators like nutrition, education, environmental condition for improving the maternal and child health. Many areas still in health programmes related with the women and children require sincere concern from all the stakeholders and are needed to be explored to get better outcome.

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