DIET AND ACTIVITY PROFILE OF RURAL WOMEN

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SUMMARY

The nutritional status of rural women in developing countries is low since childhood and during the vulnerable reproductive period as well. A study was carried out in randomly selected villages in Pune District to assess the dietary pattern and the activity profiles of rural women. The information about diet was collected by yesterdays 24 hours interview method. Score was alloted for each physical activity as per the type of work done while rest score was computed by the number of hours of sleep/rest, and the ratio of the two was calculated.

A total of 296 women were interviewed consisting of 87 each of pregnant and lactating women while 122 NPNL women. Maximum women belonged to 18-30 years age group. The mean weight recorded was 46.7kg. height 153.3cm, mean caloric intake was 1146.1 calories while protein intake was 34.8 gms per day. When the three groups were compared for BMI, caloric and protein intake, rest and activity scors, it was found that in NPNL women rest score was higher. When various diet and activity parameters were correlated with caloric intake it was found that level of activity was more among lactating mothers for same caloric intake as compared to pregnant and NPNL women while rest score was higher in NPNL women.

Thus there is a need to improve nutritional status of women in vulnerable period by nutrition education and on the spot nutrition supplementation. At the same time women must conserve energy by reducing physical activities.

INTRODUCTION

Adequate nutrition is essential to improve the health status of women. In the developing countries like India, the nutritional status of women is low since childhood and it worsens further from adolescence as the women pass through the reproductive life. Her nutrition further deteriorates due to various complex social factors affecting the health status. The rural women suffer the most due to their traditionally low status in the community.

Various household activities performed by rural women as their 'household chores' require considerable energy which may not be evident due to deemed non-occupational nature of this work. Women can be considered as 'unpaid family worker' as her role of doing household chores is not duly recognised. These household activities are undertaken by women at home even during pregnancy and lactation which may aggravate their low nutritional status during these vulnerable periods as extra dietary energy requirements in pregnancy depend on the extent to which mothers perform or reduce these physical activities (WHO 1985).

MATERIAL AND METHODS

This study was carried out in randomly selected villages under 5 Primary Health Centres (PHC), (Talegaon Dabade, Vadu, Chakan, Otur and Khanapur) under Pune District. The interns posted at these PHCs where trained to collect the information about the rural women by house to house visits. Each intern collected the information from equal number of pregnant, lactating and non-pregnant-nonlactating (NPNL) women. The women were interviewed about their food intake for the whole day by yesterday's 24 hour recall method (Gopaldas & Seshadri 1987). If the recall period pertained to unusual occurence of diet, then the recall of a day earlier were noted. Food items in household measures were initially recorded and later caloric and protein contents were estimated from the tables of nutritive values prepared by Rao (1992).

Similarly the history of various activities undertaken were recorded like washing clothes, mopping, sweeping, fetching water, cooking, washing utensils, farm work, looking after underfives, rearing and milking animals etc. The frequency of each activity i.e. daily, weekly or monthly was noted. Approximate time in minutes spent for each activity was computed by the interviewer from the detailed description of the work performed by women and score was given. The score was allotted for each physical activity based on energy expenditure for the respective work done as per Stanley Davidson et al (1975). Score of 1 was given to milk while score of 2 was given to moderate activities. There was no heavy work done.

History of rest in the form of hours of sleep at night and the rest in the afternoon were also recorded and score given. The rest score was allotted as per number of hours of sleep/rest in afternoon. The score of one was given for each 6 hours of sleep or rest. Finally the ratio of physical activity score and rest score was taken as the activity rest ratio.

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Height of each woman was measured by calibrated anthropometric rod to the nearest 0.5cm and weight was recorded by portable beam balance to the nearest 0.5kg and Body mass Index (BMI) was calculated (WHO 1995). The age was ascertained with the help of local events calender.

History of any extra diet or change in diet for pregnant and lactating women was asked. Complete physical examination was done. The signs of anaemia and history of worm infestation was also recorded.

RESULTS

A total of 296 women were interviewed.

TABLE I
AGE DISTRIBUTION OF RURAL WOMEN

Age in years	Number	Percentage
< 18	5	1.7
18-30	235	79.4
30-45	46	15.5
45	10	3.4
Total	296	100.0

TABLE II
MEAN AND S.D. OF WT, HT, BMI, CALORIC AND PROTEIN INTAKE ACTIVITY AND REST SCORE AND THE RATION FOR RURAL WOMEN.

Diet and activity parameters	Mean	S.D.
Weight (kg)	48.73	5.25
Height (cm)	153.32	6.26
B.M.I.	20.81	2.29
Calories	1146.14	418.97
Protein (gms)	34.80	13.18
Rest score	1.13	.14
Activity score	12.42	6.2
Activity : ratio	10.79	4.95

There was 87 (29.4%) pregnant, 87 (29.4%) lactating and 122(41.2%) non pregnant - nonlactating (NPNL) women. Most of the women were housewives i.e. 230 (77.7%) while 2 were having sedentary jobs (7%) and 61 (20.6%) were working as house-maids. Remaining 3 were students.

History of worm infestation was present in 24 (8.1%) of women and another 5 (1.7%) women gave history of perianal itching. Pallor was observed in conjunctivae in 188 women (63.5%), tongue in 133 (44.9%) and in nails in 139 (46.9%). The presence and absence of pallor was observed and compared as per B.M.I., caloric intake and activity score. There was no significant difference among the 3 groups.

The age distribution showed that maximum women were in the age group of 18-30 years (79.4%) (Table I).

The mean weight recorded was 48.7 kg while mean height was 153.3 cm. The mean caloric intake observed was 1146.14 calories while mean protein intake was 34.80 gms per day. The mean BMI and activity score were calculated along with S.D. Rest

TABLE III
DIET AND ACTIVITY PARAMETERS OF PREGNANT, LACTATING AND NPNL RURAL WOMEN.

Diet and activity parameters		Pregnant women (n=87)	Lactating women (n=87)	N.P.N.L. (n=122)	F	P
B.M.I.	Mean	20.9	20.8	20.8	0.22	>.05
	S.D.	2.6	1.8	2.2		
Calories	Mean	1133.4	1213.09	1107.4		
	S.D.	383.06	426.00	410.2	1.77	>.05
Proteins	Mean	35.3	36.6	33.1		
	S.D.	12.7	14.2	12.5	1.98	>05
Activity score	Mean	11.9	13.1	12.2		
	S.D.	6.2	6.6	5.9	.79	>05
Rest score	Mean	1.1	1.1	1.2		
	S.D.	0.13	0.14	0.14	3.85	<.05
Activity & rest ratio	Mean	10.5	11.5	10.4		
	S.D.	4.9	5.0	4.8	1.45	>05

TABLE IV
CORRELATION COEFFICIENT BETWEEN CALORIES AND OTHER PARAMETERS

R. Values	Pregnant	Lactating	NPNL
Calories & BMI	0.01	0.06	0.08
Calories & weight	0.001	0.16	0.07
Calories & height	0.03	0.14	0.02
Calories & Activity score	0.22	0.32*	0.08
Calories & Rest Score	0.12	0.01	0.26*
Calories & Activity Rest Ratio	.19	0.34*	0.14

*P< 0.05

score was also calculated and the ratio of activity and rest score is shown in Table II.

The three groups (pregnant, lactating and nonpregnant, non-lactating women) were compared for BMI, caloric and protein intake, rest score, activity score as well as activity, rest ratio. It was observed that rest score was significantly higher for NPNL women as compared to pregnant and lactating women (Table III).

Caloric intake was correlated with weight, height, BMI activity score, rest score and Activity : rest ratio. It was observed that the level of activity was more among lactating mothers for same caloric intake as compared to pregnant and NPNL women. It was also seen that the rest score was higher for NPNL mothers when compared with pregnant and lactating women for the same caloric intake (Table IV).

DISCUSSION

Information on dietary intake and nutritional status of vulnerable groups like women and children is essential first step in the formulation and implementation of any health and nutrition policies or programs as reported by Raghvan (1992). In the present study information collected on caloric and protein intake of women revealed gross inadequacies in this vulnerable section of society (Table II). Various studies Murthy and Reddy 1994, National Institute of Nutrition (NIN),Annual Report 1980) on average daily intake of nutrients, how gross deficiencies ranging from 10-15 gms of

protein and 500-1500 calories specially in pregnant and lactating women. The mean weight and BMI are comparable to the study conducted by NIN in 1992 where the mean BMI wass 19.3 and weight 42-43 kg a little less than in our study i.e. BMI of 20.81 and weight of 48 kg.

In special physiological states like pregnancy and lactation the requirement further increases (ICMR 1992). On the contrary the different studies Murthy and Reddy 1994, NIN Annual Report 1980) have shown that the caloric and protein intake of pregnant, lactating and NPNL groups is about two thirds of the recommended daily allowances. In our study also similar observations have been made (Table III). There is no significant difference between the 3 groups. There is a specific need of nutrition education as well as on the spot supplementary nutrition for women during pregnancy and lactation under various program like I.C.D.S.

The rest score was significantly higher in NPNL women (Table III) emphasizing the need for more rest to pregnant and lactating women so as to conserve the calories during this vulnerable periods needed to prevent low birth weight babies.

For the similar caloric intake it was observed that the level of activity was more in lactating women (Table IV). It is well known that the activity of lactating women increases due to additional responsibility of newborn care. So there is a need to advice these women to reduce the other activities and preserve the energy to maintain their own nutritional status. In a study done by NIN (reported in Annual report 1992-93) about women's work and its impact on health and nutrition revealed that though economic independence, improved health and social status in employed NPNL women it may adversely affect the health of women during pregnancy and lactation due to more physical activity.

Thus nutrition education along with on the spot nutrition supplementation judiciously selected to suit the local needs for pregnant and lactating women can bring about the favourable outcome in the nutritional stutus of this vulnerable group. At the same time there is a need to reduce the physical activity so as to conserve this energy loss to maintain their nutritional and health status.

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