Study on food consumption pattern and blood profile of urban women

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Women is the center figure for the health and welfare of the family. In the present study a total of 180 urban women were selected by stratified random technique, equal distribution existed between working and non - working groups. A survey was carried out to evaluate the socio – economic status of the selected women. The diet survey by the recall method food intakes pattern revealed that they consumed less amount of foods than the balanced diet except for fats and oils, fats and oils consumption ranged 43.00 to 61.66 g. The nutrient intake registered deficit in the consumption of energy, protein and iron ranging 1432 to 1802 (Kcal); 37.66 to 45.66 (g); 14.53 to 16.33 (mg), respectively whereas fat, calcium, phosphorus and vitamin C were recorded more than the recommended dietary allowances. Significant difference noted only for energy. Blood profiles showed range of PCV 39.13 to 44.6 per cent, Hb 8.50 to 9.00 g, RBC 4.50 to 4.70 m/mm^3, MCV 84.9 to 111.31 fl, MCH 18.43 to 19.42 pg and MCHC 20.62 to 23.21 showing the prevalence of anaemia among them.

Key Words : Anthropometry, Nutritional status, Working and nonworking women

INTRODUCTION

There is no doubt that India has made substantial progress in human development during the post-independence period. Prior to independence, many people in the country were not even being able to dream of a square meal everyday. However, as an attempt to boost the agricultural production by modernizing the technique of farming in the country, green revolution during 1960s contributed a great deal in solving the food problem and making the country self sufficient in food. According to Measham and Chaterjee (1999), green revolution provided a breathing spell for the country by achieving a balance between human numbers and food output. According to Swaminathan (1982), good nutrition is a function of both economy and education. And as revealed by Ronzio (2004), women are usually vulnerable to malnutrition for both social and biological reasons, throughout their life cycle.

In present time women are performing multiple role as bread winner and as well as housekeeper. As expressed by Hemlatha *et al.* (1999) housewives are entirely responsible for nutritional status of the family and there by the nation. Thus, it becomes necessary for the women to maintain good health and nutritional status for the development of the society.

Thus, participation of women in different fields has become a common feature. However, the changed social status of women resulted in additional workload and stress for women resulting in several health problems. Anaemia is one of the health problems from which women suffer mostly. Nutritional anaemia is one of India's major public health problems and according to the new National Health Family Survey more than 50 per cent of women are suffering from it (Micronutrient profile of India, 2005). Anaemia adversely affects health of an individual by causing decreased work performance, impaired defense mechanism, lowered physical stamina and attentiveness.

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Anaemia is the most widely spread disease currently affecting women. Its clinical manifestations are not spectacular and for this reason the disease is often ignored (Gopalan, 1999). The working women, performing dual role at home as well as out side in the profession, often undergo the stress and strain and frequently neglect dietary intake and are compelled to neglect their own health due to pressure of work. Such situation gradually leads to the occurrence of anaemia, which is not often noticed.

Therefore, the present investigation was carried out with the following objectives :
– To evaluate the food consumption pattern of selected women.
– To assess the haematological status of selected women.
– To find out the socio-economic background of selected sample.

METHODOLOGY

The present study was carried out in Parbhani town of Marathwada region of Maharashtra state. Total 180 women belonging to age group 35-50 years were selected by stratified random techniques for assessing the nutritional status of selected women belonged to the age group >35 to 50 years. The different procedures adopted for conducting the study included baseline survey, diet survey and biochemical analysis.

The obtained data were compiled and analyzed statistically with the help of suitable statistical tests. The statistical analysis was carried out including ANOVA test.

OBSERVATIONS AND ASSESSMENT

The socio-economic background of selected working and non - working women is depicted in Table 1. As regards the education more than one third (35.55%) urban working women were found illiterate followed by college education (24.44 %) and high school education (21.11 %). Further it was noticed that about 13.00 per cent urban working women were having primary education and only 5.55 per cent of them were educated up to elementary school level. In case of urban non - working women 41.11 per cent urban women were found illiterate, while 18.88 per cent of them were educated up to primary school level followed by high school level (17.77%). It was also seen that 13.33 per cent urban non -working women were having college education and 8.88 per cent of them were educated up to elementary school level. As far as type of family was concerned, it was noted that 86.66 per cent working and 83.33 per cent non - working women were belonging nuclear family whereas 33.33 per cent working and 16.66 per cent non - working urban women were from joint family.

As regards the food habits, majority of working (71.11%) and non - working (82.22%) urban women were vegetarian whereas 28.88 per cent working and 17.77 per cent non -

Table 1 : Socio-economic background of selected working and non-working women

Sr. No.	Socio-economic factor	Working women (n=90) (%)	Non-working women (n=90) (%)
Education			
1.	Illiterate	35.55	41.11
2.	Primary	13.33	18.88
3.	Elementary	5.55	8.88
4.	High school	21.11	17.77
5.	College education	24.44	13.33
Type of family			
1.	Joint family	13.33	16.66
2.	Nuclear family	86.66	83.33
Food habits			
1.	Vegetarian	71.11	82.22
2.	Non vegetarian	28.88	17.77
Family income (per month)			
1.	Below 5000	27.77	11.11
2.	5001-10000	32.22	26.66
3.	Above10001	40.00	62.22
Work pattern			
1.	House wife	----	100
2.	Office goers	45.55	----
3.	Business	20.00	----
4.	Labour	34.44	----

working urban women were non vegetarian.

Most of the working (40.00 %) and non - working (62.22 %) were having their family income above 10,000/- per month followed by 32.22 per cent working and non - working urban women were having family income in between Rs.5,001- Rs. 10,000 per month. Further it was seen that more than one fourth of (27.77 %) working and 11.11 per cent non - working urban women were found to have their family income less than Rs.5,000/- per month (Bhargawa and Kawatra, 1999).

As regards working pattern of women it was illustrated that to be office goers (45.55%) followed by laboures (34.44 %), one fifth (20 %) of them were having business.

The food intake of selected working and non-working women is depicted in Table 2. In case of urban working women, it was noted that except for milk and milk products all the other foods were consumed more by non - working women. When compared with the suggested balanced diets of ICMR, it was noted that consumption of fats and oils was high in both the groups while all other foods was consumed comparatively low. Statistically non significant difference was noted between working and non-working women for all foods.

Devdas *et al.* (1980) found that as educational level increased, foods and nutrients intakes was better. Therefore in the present study it was noted that the milk and milk product consumption which was usually considered as most nutritious diet was consumed more by urban population.

Table 3 explains nutrient intake of selected working and non - working women. The energy consumption of the women ranged from 1722.53 to 1802.27 Kcal. The working women consumed highest amount of energy. Similar trend was noted with respect to fat consumption where the value ranged from 65.47 to 81.87g. In case of protein highest consumption was noted in working women (range 39.67 to 44.47 g). The iron consumption was (15.67 mg) in working and non - working women while calcium consumption was (519.6 to 528.93 mg) in non - working and working women. Phosphorus consumption was (887.2 to 1021.6 mg) in non - working and working women whereas consumption of vitamin C was between 64.53 to 66.8 mg. However, significant difference was noted only with respect to fat and calcium among the selected group. The calcium intake was high; the reason behind it was not clear because in the intake of milk and green leafy

Table 2 : Food intake of urban working and non-working women

Name of food (g)	Working women Mean±SD	Non-working women Mean±SD	Balanced diet(g)	t value
Cereals	151.67±32.23	174.8 ±37.73	260	1.79NS
Pulses	34±20.51	39.33±25.16	60	0.63NS
Milk and milk product	136.67±76.30	131.67±43.27	400	0.22NS
Roots and tubres	41.33 ± 20.85	46.67±28.93	50	0.58NS
Green leafy vegetables	30.67± 26.89	42± 38.24	100	0.93NS
Other vegetables	33 ± 19.13	34.33 ± 25.22	75	0.16NS
Fats and oil	45.67 ± 23.58	61.67 ± 29.64	30	1.64NS

* and ** indicate significance of values at P=0.05 and 0.01, respectively   NS = Non-significant

Table 3 : Nutrient intake of urban working and non - working women

Nutrient	Working women Mean±SD	Non-working women Mean±SD	RDA	t value
Energy(Kcal)	1802.27 ± 468.87	1722.53 ± 469.67	2425	0.46NS
Protein(g)	44,47 ± 12.70	39.67 ± 10.03	60	1.15NS
Fat(g)	81.87 ± 37.87	65.47 ± 27.44	20	12.07*
Iron(mg)	15.67 ± 4.54	15.67± 3.36	28	----
Calcium	528.93 ± 132.18	519.6 ± 125.49	400	8.5*
Phosphorus	887.2 ± 31.47	1021 ± 199.79	280	1.40NS
Vitamin C (mg)	66.8 ± 28.36	64.53 ± 21.94	40	0.24NS

* indicate significance of value at P=0.05   NS =Non - significant

Table 4 : Blood profile of selected urban working and non - working women

Blood profile	Working women Mean±SD	Non-working women Mean±SD	Normal values	t value
PCV (%)	33.13 ± 10.24	43± 5.92	38-45%	3.23
Hb (g%)	8.57± 1.25	9.01 ± 1.57	12.0-15.5g%	0.85
RBC (m/mm^3)	4.70± 0.42	4.58± 0.48	4.2-5.4 m/mm^3	0.73
MCV (fl)	89.90± 4.54	94.43± 11.72	76-96 fl	1.40
MCH (pg)	18.43± 1.72	19.42± 1.94	27-31 pg	1.48
MCHC (%)	23.22± 6.35	21.13± 3.60	32-36%	1.11

vegetables, the main source of minerals was average. This could be due to the type of vegetable consumption than the quantity of vegetables consumed. Further, it was noted that iron intake was similar. It was also noted that intake of fat, calcium, phosphorus, vitamin C were more than RDA. Devdas *et al.* (1980) also reported high fat intake of women *i.e.* 71.8 g and 50.2 g, respectively. Iron intake was reported 15.67 g to both group. According to Ifon and Bassir (1978) green leafy vegetables contained appreciable quantities of iron. In case of working and non - working women no significant difference was noted. Similarly findings were observed by Rao *et al.* (1980) and Renquist *et al.* (1978).

Blood profile of selected working and non - working women is presented in Table 4. The packed cell value, haemoglobin, red blood cells, mean corpuscular volume, mean corpuscular haemoglobin and mean corpuscular haemoglobin concentration varied from 33.13 to 43.00 per cent, 8.57 to 9.01 g per cent, 4.50 to 4.70 m/mm^3, 89.90 to 94.43 fl, 18.43 to 94.43 pg and 21.13 to 23.22 per cent, respectively. Though greater variation was noted in many parameters, significant difference were observed only with respect to red blood cells which was found to be significantly high. Hemlatha *et al.* (1999) when conducted a study on iron profile of working women comparison with housewives, they found the high value for housewives followed by office goers, weavers and stone cutter according to the increase in intensity of activity resulted in low haemoglobin level. In the present study the haemoglobin values have non significant difference. Anaemia occurs due to deficiency of iron because low intake of iron results in unavailability of raw materials required for haemoglobin formation (Srilaxmi, 2003). Vegetables in Indian dietaries form good resources of iron. In the present study it was noted that urban population was consuming less vegetable (Table 2) the perusal of Table 4 revealed that anemia was prevalent in the selected groups. The blood profile of working and non - working women revealed non significant difference with all parameters except for red blood cells.

Conclusion :

In conclusion it can be stated that all the women selected from Parbhani area were suffering from anaemia as their food intake and nutrient intake was below than requirement which ultimately resulted in anaemia. Hence, all these findings depict the need for nutritional education for the awareness of food intake and nutrient intake which will be further beneficial for better health and nutrition status.

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