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Effect of area on nutritional status of working and non-working women

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Participation of women in different fields has become a common feature now a days. However, changed social status of women resulted in additional workload and stress resulting in adverse effect on health and nutritional status of working women. In the present study a total of 360 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 nutritional status was assessed with the help of anthropometry, BMI. The hematological assessment was carried out to find out the prevalence of anaemia among the selected groups. Majority of non -working women were maintaining normal BMI 61.11 per cent while 55.55 per cent were working women. Majority of non -working women were suffering from moderate anaemia followed by mild and severe.

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

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INTRODUCTION

Woman plays an important role at home as well as in the society. In earlier days majority of Indian women were shy, illiterate, pessimistic and traditional and their traditional mind feels that being women they are subordinate in society and restricted themselves to household activity only. However, with the development of the country, the status of the women changed in the society and they are at the helm of the efforts in every industry from Government to hi-tech computer services and they are treated as equal footing to man in all aspects of industry. Now days they are reaching to height even in military services. Not only in industry but also at rural level women were performing several important agricultural activities. Women play a significant and crucial role in agriculture and allied fields including main crop production, livestock, horticulture, post- harvest operations etc. It has been estimated that 86 per cent of the total rural women are working for various agricultural operations. At times women are performing multiple role as bread winner and as wells as housekeeper and nurture and care for the family.

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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). The belief that a woman should eat better foods and more foods (for pregnant women) is as old and has been held by both the extremes- laymen and scientists (Fleck, 1971). But there has been a gap between the thought and the action. This study aims at providing a database showing the exact picture of Orissa regarding food, nutrition and health. 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. As children in some parts of the world, girls are discriminated against in access to health care, to food and education and in other ways. As teenagers, they risk of early pregnancy and suffer with more risk of retarded growth than boys. Reproductive aged women are subject to numerous stresses affecting the health and well being.

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. This

will have adverse effect on health and also affects the quality of work and output. The aggregate workload placed on the women tends to be high thereby lowering efficiency and leading to irreparable damage to their body in long run. It is necessary to take more care of women than men who are vulnerable to mal-nutrition. Mal-nutrition in women is further aggravated by repeated pregnancies and lactation (Kale *et al.*, 1999). Health is crucial area where no due attention has been paid for women. 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.

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 objectives :

- To assess the nutritional status of women by anthropometric measurements.
- To find out the socio-economic background of selected sample.
- To identify prevalence of anaemia among the selected women.

METHODOLOGY

The present study was carried out in Parbhani town and rural area of Marathwada region of Maharashtra state. Total 360 women. belonging to age group 35-50 years were selected by stratified random techniques for assessing the nutritional status of selected women. The different procedures adopted for conducting the study included baseline survey, diet survey assessment of nutritional status with the help of anthropometric measurements 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. The distribution of women area wise was equal. The distribution of working and non-working women in both area was similar. It was noted that 60.5 per cent working women and 59.44 per cent non - working women illiterate. The primary school, elementary school and high school educated were more in non - working women. The working women contained high percentage of college education. Majority of selected households were nuclear (85.00% to 89.44%) while very few *i.e.* 10.35 to 15 per cent were from joint families. Almost three fourth selected samples were vegetarians and only one fourth was non-vegetarians. More number of families was belonging to income group 5,000 to 10,000. Among the selected ladies 50 per cent were house wives and remaining were agriculture workers (49.44%) followed by office goers (21.66), business persons (13.88%) and laboures (15%).

Table 1 : Socio-economic background of selected women (n=360)

Sr. No.	Socio-economic factor	W.W. (n=180)	N.W.W. (n=180)
Area			
1.	Urban	50	50
2.	Rural	50	50
Education			
1.	Illiterate	60.5	59.44
2.	Primary school education	9.44	11.66
3.	Elementary school education	6.11	9.44
4.	High school education	4.4	8.3
5.	College education	19.44	11.11
Types of family			
1.	Nuclear	85	89.44
2.	Joint	15	10.35
Food habits			
1.	Vegetarian	76.11	73.88
2.	Non-vegetarian	23.88	26.11
Monthly family income			
1.	< 5,000	39.44	22.22
2.	> 5,000-10,000	45.00	51.11
3.	> 10,000	15.55	26.66
Work pattern			
1.	House wives	------	50.00
2.	Office goers	21.66	------
3.	Agriculture workers	49.44	------
4.	Business person	13.88	------
5.	Labours	15.00	------

(W.W.- Working women, N.W.W. - non-working women)

Anthropometric measurements and BMI of working and non-working women belonging to urban and rural areas are stated in Table 2. The height, weight mid arm circumference and BMI of the selected women were varying between 150.32

to 152.21 (cm), 43.25 to 52.36 (kg), 21.28 to 24.21 (cm) and 19.14 to 22.53, respectively. The urban women exhibited higher values as compared to rural women. The urban working women exhibited significantly higher values for height and weight whereas the difference was significant for height and weight and as well as for BMI in case of non- working urban and rural women. When compared area wise difference was noted only with respect to weight while all other parameters were non-significant. Both urban and rural non -working women exhibited significantly better weight as compared to working women.

The nutritional status of selected women based on BMI is presented in Table 3. It is evident from table that majority of rural working women were underweight while non-working women were overweight. The percentage of normal women was found high in non-working urban. When compared between urban and rural areas more number of urban women was overweight (59-55%), while more percentage of rural working was under weight (54.44%). The more percentage of normal women was found in urban group than in rural group. However, when considered separately area wise working urban women were found to be more underweight (33.33) as compared to nonworking urban women. In contrary the majority of working rural women was underweight when observed according to age the percentage of women belonging to underweight and normal category increased as the age increased.

Effect of area and work pattern on anthropometric measurement and BMI of women :

In the present study (Table 2 and 3) the anthropometry of women was influenced significantly by area and to some extent by age. The influence of work pattern was noted only in respect of weight. In urban as well as rural areas significant difference was noted in weight among working and non-working women. Similar observation was also noted with respect to BMI while non-significant difference was observed for rest of the measurements. When compared with mean height and weight of Indian women the present values of selected women were lower. This could be due to the type of food consumed by selected population because the food consumption influence to the greater extent on the nutritional status of population (Gupta, 1985). The present study revealed better anthropometry by urban women as compared to rural women. Nutritional status grossly depends upon the feeding habits, ecology, vegetation of the area and the socio-economic condition of the community.

Survey carried out in urban and rural area of Parbhani revealed better nutritional knowledge among urban women (Zanvar *et al.*, 2007) probably this could be influencing factor for better anthropometry noted in present study. The results of the present study also revealed prevalence underweight was more in working women as compared to non-working women. When compared by area more number of rural people suffering under weight as compared to urban people. The high prevalence of under weight in working women could be due to the pressure of work at work place and as well as at home. On the other hand the non-working women enjoy a more relaxed and tension free life style which resulted in their normal nutritional status. Ambore (2004) and Prabhakaran (2003) also reported similarly when conducted study on adolescent girl belonging to same socio geographical background.

Table 2 : Anthropometric measurements and BMI of selected working and non-working women

Anthropometric measurements	Urban area		Rural area		f value	C.D.
	W. W.	N.W.W.	W. W.	N.W.W.		
Height (cm)	151.710	152.21	150.32	151.09	2.77*	1.35
Weight (kg)	48.700	52.36	43.25	46.61	26.97**	2.03
MAC (cm)	21.410	23.50	21.28	24.21	1.61NS	3.21
BMI	21.150	22.53	19.14	20.29	21.24**	0.85

* and ** indicate significance of values at P=0.05 and 0.1, respectively, N.S. = Non–significant
(W.W.= working women, N.W.W. = non-working women)

Table 3 : Nutritional status of selected women based on BMI

Groups	Under weight (%)	Normal (%)	Over weight (%)
Working women	47.77	44.44	7.77
Non-working women	32.77	57.22	10
Urban	26.11	58.33	15.55
Rural	54.44	43.33	2.2
Working women (U)	33.33	55.55	5.5
Non-working women (U)	18.18	61.11	10
Working women (R)	62.22	33.33	2.2
Non-working women (R)	18.11	61.11	-

U = Urban area, R = Rural area

Degree of anaemia among selected women based on haemoglobin level is presented in Fig. 1. The table revealed that 70 per cent of working women were suffering from moderate anaemia followed by mild 20 per cent and severe 10 per cent anaemia. However, 43.44 per cent non-working women had mild anaemia while 40 per cent women well suffering from moderate anaemia and 16.66 per cent women had severe anaemia. According to area 50 per cent of urban women were suffering from moderate anaemia. The mild anaemia was seen in 33.33 per cent and severe anaemia was recorded 16.66 per cent rural area. 60 per cent women were suffering from moderate anaemia, 30 per cent from mild anaemia and 10 per cent had severe anaemia. More educated women were suffering with moderate anaemia (56.00%) followed, mild (28.00%) and severe anaemia (16.00%). Whereas, in illiterate women 48.57 per cent moderate, 42.85 per cent mild and 8.25 per cent severe anaemia was observed. Among of vegetarian women 16.00 per cent were suffering from moderate anaemia, 27.5 per cent with mild and 12.5 per cent with severe anaemia. Non - vegetarian women, 50.00 per cent were suffering from moderate anaemia, 35.00 per cent mild and 15.00 per cent severe anaemia, respectively (Ifon and Bassir, 1978).

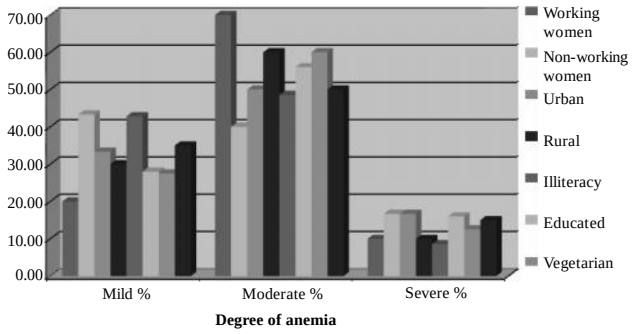

Fig. 1 : Degree of anameia among delected women based on haemoglobin level

Effects of area and work pattern on prevalence of anaemia :

The perusal of Table 3 and Fig. 1 revealed that anaemia was prevalent in the selected groups. The comparison between working and non-working rural population revealed that working rural women had significantly lower values of mean corpuscular volume (97.37%) while non-working rural women had significantly higher values of mean corpuscular volume (111.31 fl). Hemlatha *et al.* (1999) when conducted study on iron profile of working women comparison with housewives reported high value for housewives followed by office goers, weavers and stone cutter, according to her the increase in intensity of activity resulted in low haemoglobin level. In the present study though the haemoglobin values have non-significant difference, the mean corpuscular volume which influence the overall occurrence of anaemia showed significant difference indicating possibilities for anaemia. Overall when observed the urban population had lower values as compared to rural population. Anaemia occurs due to deficiency of iron because low intakes of iron results in unavailability of raw materials required for haemoglobin formation (Shrilaxmi, 2003). Vegetables in Indian dietaries form good resources of iron. In the present study it was noted that rural population were consuming more vegetable as compared to urban population, therefore, the better blood profile observed in rural women could be attributed to the better consumption of vegetable by the rural women.

When considered in terms of work pattern it was noted that more percentage of non - working women (16.66%) were suffering with severe anaemia as compared to working women. It is generally noted that working women enjoy more financial freedom and are more aware of health and nutrition. As expressed by Devdas *et al.* (1980) that improvement in income and literacy level results in better nutritional status.

On the other hand when compared in terms of urban and rural area it was evident that more percentage of urban population were suffering from severe anaemia as compared to rural area. This could be due to better consumption of vegetables which are freely and abundantly in rural area.

According to education status it was noted that less number of illiterate people were suffering from severe anaemia whereas more number of literate people were suffering with severe anemia. It is believed that improvement in literacy and awareness result in better health care practices. However, surprisingly in the present sample the educated women were suffering with severe anaemia while it was less in uneducated women. Previously while discussing the food habits it was noted that rural women were consuming more vegetables as compared to urban women. In the present study most of the illiterate sample belonged to rural area hence, less number were suffering with severe anaemia as compared to educated group which was drawn from urban area.

In case of vegetarian and non-vegetarian group, more number of non-vegetarian were suffering from severe anaemia than the vegetarian. Indeed non-vegetarian foods are good sources of ionizable iron and thus, help in improving the nutritional status with the respect to iron. However, it was noted in food consumption that non -vegetarian consumption was not daily instead only occasional. As per Indian tradition the women and housewives are the last to get their share of non-vegetarian dish which ultimately results in less consumption of non-vegetarian foods. On the other hand vegetables are iron rich foods and are cheap and available in plenty. Probably that is why more non vegetarian women were suffering with severe anaemia.

Conclusion :

In conclusion it can be stated that all the women selected

from Parbhani area were suffering from anaemia and under weight. Hence, all these findings depict the need for nutritional education which will be further beneficial for better health and nutrition status.

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