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PREVALENCE OF ANEMIA AND ITS IMPACT ON HEALTH OF PREGNANT WOMEN

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ABSTRACT:

Iron deficiency is one of the most prevalent micronutrient deficiency found in developing countries. Nutritional anemia can result in life long disadvantages including low productivity, decreased immune system mental ability etc. A sample of 250 pregnant women of age group between 15 to 35 years were selected randomly from rural and urban areas of Beed district. The experimental group 'A' received dietary supplementation (ground nut & jaggary Ladu) for ninety days. Whereas group C not received any supplementation and treated as control group. These samples were examined anthropometrically, biochemical & Clinical before & after supplementation. Anthropometrical data shows that experimental group result was better or good as compared to control group. Out of 250 pregnant women 95% had hemoglobin level below 9gm. i.e. These pregnant women were anemic. Rural pregnant women were found to consume a monotonous meal and subsisted mainly on cereals. Poverty, illiteracy & poor food consumption pattern speaks for nutritional anemia. The rural areas are alarming & no. of deficiency diseases is seen. To solve this problem nutrition education, food fortification & food based approaches are the most effective measures to address the micro nutrient deficiency like iron.

KEYWORD: Prevalence, Anaemia, Rural, Urban, Health Status.

INTRODUCTION:

India is a land of rural community and women constitute nearly half of its population. 80% of Indian women live in rural areas. According various survey reports, the female adult constitute nearly one tenth of total Indian population. (NIPCCD 1966), WHO 1996, Report of Government of India 2001) and the quality of this group is more significant in the

context of national development. Therefore adult women health plays an important role in determining the health of the future generation.

The anthropometrical measurements of rural adult women were lower when compared with well to do groups (Chaturvedi et al 1994) It is due to the development process of these women exert significantly increased demands of both micro and macro nutrients, (Sokarjo et al 2004 Lopez martos 2004). Many studies revealed that



women receive inferior quality of diet. (Ghosh 1985 Gupta 1986, Bardhan 1987) Whereas these women were more likely to have low intakes of energy, carbohydrates, iron, calcium and niacin. (Woodward 1985, NNMB 1975-80, pushpamma 1982, Seshadri 1992 Yeguang Jun 1995) According to Nutritional and health profile data about 60% of pregnant women were undernourished which leads to consequent malnutrition makes women more vulnerable to infections and deficiency disease.

Iron is one of the most abundant elements in human body. But Indian adult women diet content very low iron, which may not meet their body iron requirement. The increase need of iron for adult women on one hand and the difficulty to meet iron requirement on the other hand make adult women in general and in particular more prone to iron deficiency anemia. An eleven country study found that more than 40% of women in Asian countries including India were anemic (Hb < 115 g/l Kurz 1996). The percent prevalence of anemia among in adult women was 4, 12, 23 in upper middle and poor socioeconomic groups respectively (Khanduja and Agarwal 1969, Khanane and Ghonekar 1997). While Narsingrao study concluded the percent prevalence of anemia in 25-40 years, Females was 95.1, 66.7 and 18.4 respectively. About 65% of the upper income and 79% slum group adult women of Hyderabad had different grades of anemia, while 17 to 22% of both groups had Hb levels below 10g/dl indicating moderate to severe anemia (Rao et al 1984) The overall incidence of anemia (Hb < 12 percent) was around 25% irrespective of urban and rural residence (Raman 1990) This micronutrient deficiency (iron deficiency) in female adult can seriously affect their health (WHO 2006) i.e this deficiency have debilitating effects on growth, development and functional capacities of rural & urban adult women. Moreover it is clinically manifested by rapid exhaustion, muscular weakness, anorexia (Leibel 1977, Oppenheimer et al 1983) These symptoms can also affect on physical work output (Ohiral et al 1981).

Any deprivation during adulthood are believed to adversely affect the outcome of pregnancy, resulting in high maternal mortality, low birth weight, and poor nutritional status of the infants (Harrison et al 1985, Naeya et al 1981, Brabian et al 1992). WHO has suggested that the four basic approaches for iron deficiency anemia are supplementation with medicinal dietary iron, nutrition education, to increase dietary intake, the control of infection and fortification of a staple with iron. From above four methods, recently many investigators here proved that iron therapy is the most useful method of reducing the problem of anaemia.

To combat the anaemia's problem in India, National Nutritional anemia prophylaxis programmers were started. In this view in the present investigation, an attempt has been made to improve the ongoing supplementation programme to encourage in rural & urban areas of Perbhani district. At the same time instead of medicinal supplementation, it was decided to assess the impact of dietary supplementation on anaemic pregnant women and improve the iron status of these rural & urban pregnant women.

OBJECTIVES:-

- 1) To study the growth pattern of rural & urban pregnant women.
- 2) To know the dietary pattern of rural & urban pregnant women.
- 3) To know the socioeconomic status of rural & urban pregnant women.
- 4) To study the prevalence of anaemia in rural & urban pregnant women.
- 5) To impart the nutritional knowledge on rural & urban pregnant women.

METHODOLOGY:-

The present study was carried out in the different rural areas of Perbhani district. Five hundred rural pregnant women in the age of 20 to 40 years belonging lower, middle and high income group were selected. A socioeconomic and dietary survey was carried out with the help of questionnaire cum interview schedule. All the information related to religion, education, monthly income, family type, and dietary habit etc. was collected and manipulated in the table form. Two hundred fifty (250) rural & urban pregnant women were selected for dietary supplementation programme. These women were divided into two groups. In group (A) 125 adult women were treated as experimental sample, but in group C one hundred and twenty five adult women were treated as control sample. Dietary supplementation i.e. (groundnut and jaggary Ladu 150gm) was provided to experimental sample for ninety days. But control sample did not receive any dietary supplementation. Anthropometrical data

of group A and group C samples were measured before and after supplementation.

Hb level of all selected samples (250) were also analysed before and after supplementation. A thorough clinical examination of (250) selected sample was carried out with the help of physician before and after supplementation.

RESULT AND DISCUSSION: -

The result of socio economic survey revealed that maximum no. (48%) of study samples were in the age 20 to 30 years. It was noted that 60% of the pregnant women were passed only tenth std. It was observed that 57.5% adolescent girls were belonging to nuclear family system. Majority of the head of families (father) i.e. 68.5% were working in their agriculture field and only 8.5% were engaged in service. Therefore 51% families were having their monthly income less than 4000/- only 20 %families were having their income above 15000.The backward character of agriculture and existence of industrial activities are the main reason for poor condition of rural families. These families were spending major part of their monthly income on farm cultivation and only few families were spending their income on education or any other requirement.

The food consumption survey was carried out by 24 hours recall method. Fifty pregnant women from each income group were selected for food consumptions survey (i.e. lower, middle and higher) All nutrients were inadequate in the diet of rural samples as compared to RDA of ICMR. Observation of the present study shows that inadequate income sources makes it difficult and impossible to rural families to get nutritious food items, which is daily requirement of her body. Generally most of the rural families cultivated leafy vegetables which are the rich sources of iron and vitamins, but they sell it. Therefore the intake of negligible quantity of leafy vegetables by these women was one of the responsible factors for higher incidence of iron deficiency anaemia among them.

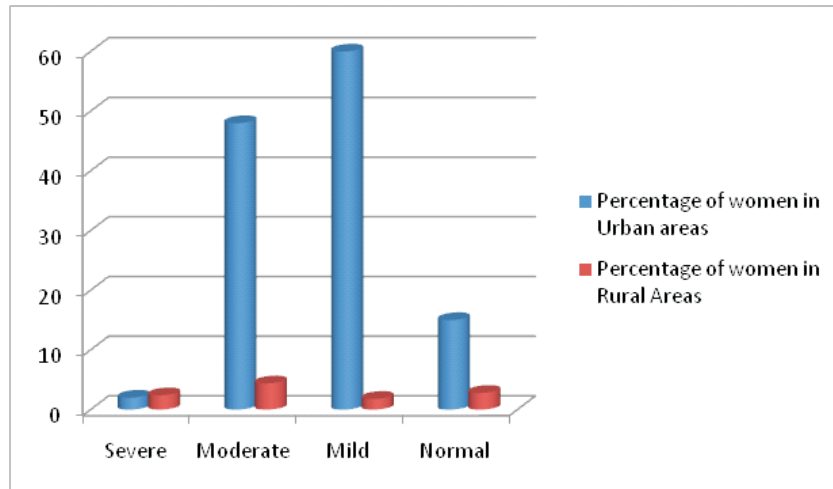
After applying WHO's criteria for labeling anaemic women, it was observed that 95% pregnant women were anaemic. But the severity of anemia was different in different samples.

BIO-CHEMICAL MEASUREMENTS:-

With the help of bio-chemical measurement the data was analysed and discussed in the following heads .Hemoglobin level:

Table No.1 Percentage of anemia in pregnant women:

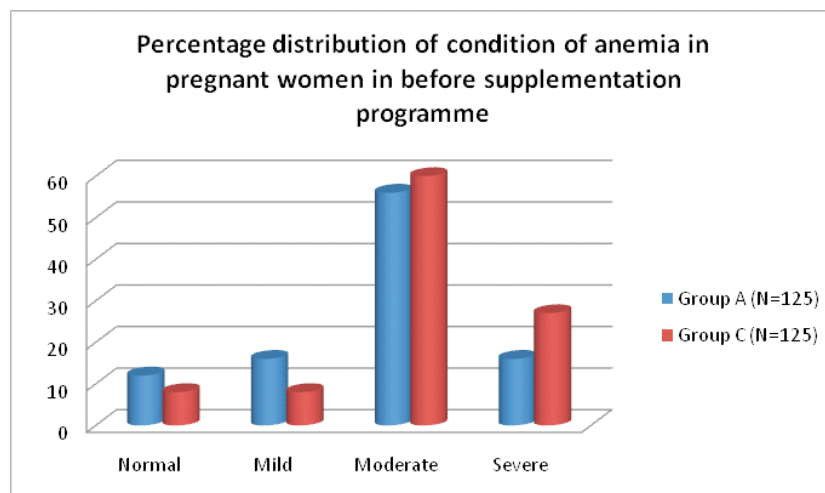
Hb (gm/dl)	Grade of Anaemia	No. of women (urban areas)	Percentage	No. of women (rural areas)	Percentage
<7	Severe	02	0.8	05	04
7 – 9	Moderate	48	38.4	65	52
9-11	mild	60	48	45	36
<11	Normal	15	12	10	08

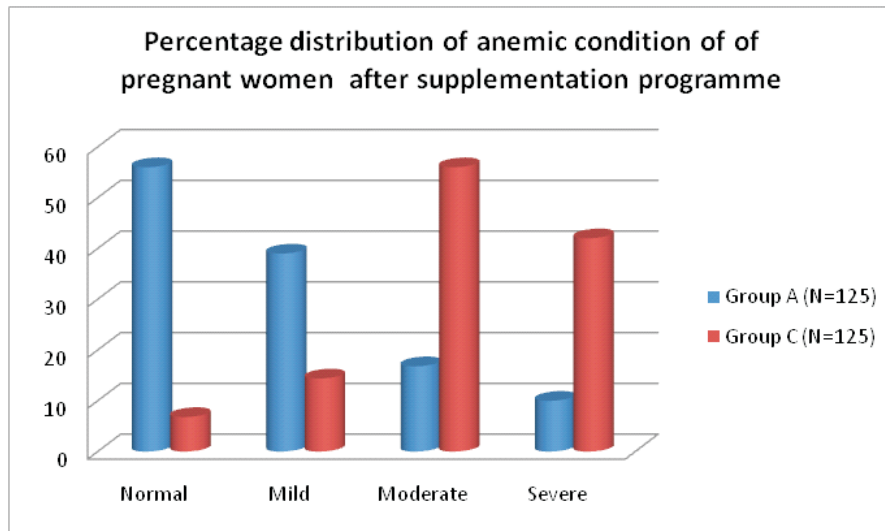


The above table represents the anemia in rural and urban adult women. 0.6% and 4% of severe anemia was found in urban and rural adult women respectively, whereas 52% in urban and 38.4% in rural adult women were having moderate type of anemia. While 36% urban and 48% rural adult women were having mild type anemia. Only 8% and 12% urban and rural women were having normal grade anemia. Thus it seems that the percentage of anemia is more in urban adult women as compared to rural adult women

Table No.2 Percentage distribution of anemic condition of pregnant women during supplementation programme.

Condition of Anaemia	Group A (N=125)		Group C (N=125)	
	Before suppl.	After Suppl.	Before suppl.	After Suppl.
Normal	15 (12%)	70 (56%)	10 (8%)	08 (6.4%)
Mild	20 (16%)	49 (39%)	15 (8%)	18 (14.4%)
Moderate	70 (56%)	21 (16.8%)	75 (60%)	71 (56.8%)
Severe	20 (16%)	10 (8%)	50 (24%)	53 (42.4%)





The condition of anemia in rural and urban adolescent girls before and after supplementation is presented in the above table. Before supplementation the normal, mild, moderate and severe condition of anemia in group A was 12%, 16%, 56% and 16% respectively. But after supplementation only 8% & 16.8% women were having severe & moderate anaemic condition and 39.2% samples were having mild anemia. But majority of them that is 56% samples were normal.

On the other hand before supplementation 8% adult women were normal and 8%, 60% & 24% samples were having mild, moderate and severe type of anemia in group 'C' but after completion of ninety days supplementation programme of group 'A' only 6.4% adolescent women remained normal and 14.4%, 56.8% and 42.4% adult women were having mild, moderate and severe type of anemia.

Table No. 3 Percentage distribution of hemoglobin status of urban and rural pregnantwomen:

Age	Deficient ≤ 10		Low 10 ≤ 11.5		Acceptable ≥ 11.5	
	No. of pregnant women	Percentage	No. of pregnant women	Percentage	No. of pregnantwomen	Percentage
20	32	12.8%	14	5.6	07	2.8
25	27	10.8%	14	5.6	06	2.4
30	24	9.6%	23	9.2	05	2.0
35	22	8.8%	24	9.6	07	2.8
40	28	11.2%	23	9.2	04	1.6
	133	53.2%	88	39.2	29	11.6

The study result revealed that majority of the pregnantwomen i.e. 53.2% were having their Hb status below 10 gm/dl. Whereas 39.2% pregnantwomen were having Hb status less than 11.5 gm/dl. Only 11.6 adult women were having acceptable Hb status. Thus it is indicated that the lack of awareness about their daily diet may be responsible factor for the deficient condition of Hb status.

That means 90% of rural adult women of experimental had mild, moderate, severe anaemia. While in control group samples 93.99% and 50% have severe anaemia. But after supplementation programme most of the adult women become normal and only 53.33% experimental samples & 90% and Control Samples had moderate & several type anaemia respectively. But there was no decrease in anaemic samples of control group. Before supplementation majority of the experimental samples i.e. 85% were having less hemoglobin level than normal, but after supplementation there had been increased in the Hb level of rural adult women. But there was no increased in the Hb level of control group.

In the clinical examination 35% of pregnant women appeared to be normal, but 10 and 12% of samples have angular stomatitis and stomatitis were present respectively. In the group A, 24% and 23% of women had pallor and weakness symptoms, but these symptoms were disappeared after supplementation. In control samples pallor and weakness symptoms remained unchanged. These symptoms were present in these samples due to inadequate supply of highly needed nutrients during this period. It was observed that dietary intakes of rural & urban samples was very low and daily physical activity was high. Therefore rural women weight about 1 to 2 kg less than urban counterparts.

The study data suggests that anaemia might be one manifestation of overall dietary inadequacy and consequent of under nutrition. Since it is possible that dietary supplementation can be helpful to improve the Hb level and the nutritional status of rural & urban women. In the present study efforts have been made for this rural & urban pregnant women for better nutritional status and improvement in the Hb level for the same.

Conclusion: It was found that dietary supplementation of iron has the advantage of producing rapid improvement in iron status of the adult women as well as it is beneficial and effective for increase in the Hb level of study samples. Therefore supplementation programmes are very necessary in rural & urban areas along with nutrition education must be given by applying informal type of teaching methods and it is necessary to involve these women in such type of programmes, which can be helpful for their better health and nutritional status.

Finally it may be said that to change the dietary pattern of rural & urban pregnant women, it is very important to start iron supplementation for the girls before adolescent period which can store the iron quantity for present as well as future demands.

RECOMMENDATION:

The following recommendation can be made in the light of the result of the present study.

1. Educational status of Adult women can be improved by motivating them to providing them educational services at home, community and national level.
2. The nutritional status of rural & urban pregnant women is very low, Hence health status should be improved with the help of nutrition education by involving health agencies, mahilamandals or social organizations etc.
3. There is a need to improve female literacy and encourage them in informal teaching.
4. Knowledge about use of locally available foods in daily life should be given involving them in I.C.D.S. programmes.
5. Further detail investigation can be done in this area and a package of various nutrition education aid can be developed and implemented.

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