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Nutritional status of rural and tribal pregnant woman of Karimnagar district, Telangana



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Abstract

The study was conducted in both of Huzurabad and Husnabad mandals of Karimnagar district of Telangana state where the ICDS project in operation. Two tribal areas from Husnabad and two rural areas of Huzurabad were selected for the study. Sixty pregnant selected 30 pregnant from each of the selected area. In the present study data was collected by using pretested questionnaire developed. Different nutritional deficiencies were identified by clinical signs and symptoms observation. Among the pregnant women surveyed in rural area majority were between 4-8 months pregnant. In tribal area 30% were in 7th month and 26.66% were in 5th month of pregnancy. Riboflavin and Iron deficiency were prevailing among almost 1/3rd of the respondents. Rural pregnant were consuming 1800 k.cal where as 1680 k.cal by tribal pregnant woman. Similarly the other nutrients taken was for rural and tribal pregnant women were Protein 54g and 58g, Fat 52g and 42g, Vit A(B carotene) 2095µg and 2243µg, Vit C 42g and 28g, Iron 8mg and 7mg. There is a 1/4th deficiency was observed for energy, protein, vitamin A and Vitamin C, whereas 1/3rd met for the iron that is supposed to be taken. Therefore, sustained health and nutrition education is recommended to the women and their families and communities on increased food intake, proper dietary practices and dietary diversification during pregnancy and lactation.

Keywords: Pregnancy, lactation, foetus, gravida, Clinical assessment macro and micro nutrient deficiencies

Introduction

Pregnancy and lactation are natural milestones in the life of a woman. During this phase, nutrition helps her in maintaining health and achieving desirable outcome. The maternal influence has a major bearing on the growth of the infant. Nutrition plays a very important role in maintaining good health among expectant and lactating mothers and the newborn babies. There is evidence that a large majority of the mothers in the developing countries consumes inadequate diet and suffers from malnutrition.

Pregnancy is associated with physiologic changes that result in increased plasma volume and red blood cells and decreased concentrations of circulating nutrient-binding proteins and micronutrients. In many developing countries, these physiologic changes can be aggravated by under nutrition, leading to micronutrient deficiency states, such as anaemia, that can have disastrous consequences for both mothers and newborn infants.

The malnutrition problem among pregnant and lactating mothers is very complex. Majority of them do not get even the desirable nutritional requirement of non-pregnant and non-lactating women. The cast occupation and family type did not bear a close relationship with nutrition intake. The main limiting nutrients in the diet of mothers were energy, protein, vitamin A and calcium.

Purandare *et al.*, (2002)^[5] stated that pregnancy is a unique experience in every woman's life. The thought of a growing fetus in the mother's womb, indeed is nature's way of expressing the attributes of motherhood. However, pregnancy is also demanding. This fetus is dependent on the mother for its nutrition, which is necessary for its growth and development.

The study was conducted in both of Huzurabad and Husnabad mandals of Karimnagar district of Telangana state where the ICDS project in operation. Two triabal areas from Husnabad and two rural areas of Huzurabad were selected for the study. Sixty pregnant selected 30 pregnant from each of the selected area. In the present study data was collected by using pretested questionnaire developed. Different nutritional deficiencies were identified by clinical signs and symptoms observation.

The gravida and month of pregnancy were tabulated in the table 1.

A majority of pregnant women were of primary gravida in both rural and tribal areas accounting to 56.66 (n=17) and 53.33 (n=16) percent respectively. None of the pregnant women were tertiary and quaternary gravida.. This indicates the increased awareness regarding birth control in both rural and tribal areas.

Table 1: Gravida of pregnant women

Area	Primary		Secondary		Tertiary		Quaternary	
	N	%	N	%	N	%	N	%
Rural area	17	56.66	13	43.33	0	-	0	-
Tribal area	16	53.33	14	46.66	0	-	0	-

Table 2: Month of pregnancy

	1		2		3		4		5		6		7		8		9	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Rural area	0	-	0	-	1	3.33	5	16.66	7	23.33	4	13.33	5	16.66	8	26.66	0	-
Tribal area	0	-	0	-	1	3.33	4	13.33	8	26.66	6	20	9	30	2	6.66	0	-

Among the pregnant women surveyed in rural area, as given in Table 4.3.majority were between 4-8 months pregnant. In tribal area 30% were in 7th month and 26.66% were in 5th month of pregnancy.

It reveals that initial nutrition in fetal and childhood state has both short term and long-term influences. Short-term influences are related to development of brain, growth of baby as well as metabolic coordination concerning nutrients, hormones, receptors and genes. Long-term influences get expressed in terms of learning capacity, resistance power, working capacity as well as chronic disease like diabetes, obesity, heart disease, high blood pressure, cancer, stroke and ageing (UNICEF, 2000) [7].

One reason for discordant findings may be the exclusion of many gravidas with iron deficiency from these trials or the data concerning gravidas with pregnancy outcomes such as pre-term delivery from the analysis (Theresa *et al.* 2000) The clinical signs and symptoms identified among all the respondents were given in the table. Clinical assessment was done for all the respondents for finding the nutritional deficiencies which used as good indicators for identifying macro and micro nutrient deficiencies.

Table 3: Clinical assessment of rural and tribal pregnant women

s.no	Clinical symptoms	Rural pregnant	Tribal Pregnant
1.	Riboflavin deficiency		
	Angular stomatitis	4(13.3)	3(10)
	Chelosis	1(3.3)	1(3.3)
	Atrophic papillae	2(6.7)	-
2.	Iron		
	Paleness of lower eye lids,tongue,lips	5(16.7)	2(6.7)
	Pale eyes tongue/ lips/ face	5(16.7)	10(33.3)
	Tiredness/lack of energy	2(6.7)	3(10)
	Edema of feet	3(10)	5(16.7)
	Spoon shaped nails	3(10)	2(6.7)
3.	Florosis		
	Mottled teeth	2(6.7)	-
	Dental cavities	3(10)	4(13.3)

A majority of pregnant women were of primary gravida in both rural and tribal areas accounting to 56.66 (n=17) and 53.33 (n=16) percent respectively. None of the pregnant women were tertiary and quaternary gravida. This indicates the increased awareness regarding birth control in both rural and tribal areas.

Malnutrition affects people in general, but its adverse effects are more pronounced among the vulnerable groups of women and children in rural and urban area. UNICEF (1990) stated that, the cycle of malnutrition starts at birth, when a girl child born with low birth weight enters into infancy undernourished. In India, 30 percent of the children are born underweight and 47 percent are malnourished.

Among the respondents 13.3% rural pregnant and 10% tribal pregnant were identified with angular stomatitis. Similarly 3.3% and 3.3% of rural pregnant and tribal pregnant women were identified with chelosis. Another 6.7% of rural pregnant identified with atrophic papillae which were major symptoms of riboflavin deficiency.

Respondents of the rural pregnant and tribal pregnant were suffering with 16.7% and 6.7% paleness of lower eye lids, tongue, lips, 16.7% and 33.3% pale eyes tongue/ lips/ face, 6.7% and 10% tiredness/lack of energy, 10% and 16.7% edema of feet, 10% and 6.7% spoon shaped nails which were symptoms of iron deficiency. Tribal pregnant and lactating mothers were suffering more when compared to rural respondents.

Another 6.7% of each rural pregnant were identified with mottled teeth, similarly 10% rural pregnant and 13.3 tribal pregnant were suffering with dental cavities.

Allen (1993) [2] stated that about 60-70 percent of pregnant women in India have haemoglobin levels lower than 11 percent and 50 percent of mothers in the age range of 15-45 years have haemoglobin values lower than 12 percent. Chawla *et al.*, (1996) [3] reported the About 38 percent mothers had haemoglobin level below 10.0 gm /100 ml and were anaemic. In 80 per cent of women, no extra food is taken during pregnancy and lactation, which in turn reflects the nutritional status of newly born.

India 50% population effected with anemia in women. Anemia may become underlining cause of maternal mortality and perinatal mortality. It also results increased risk of premature delivery and low birth weight babies (Agarwal *et al.*, 2006) [1].

Table 4: Dietary assessment of Rural and Tribal pregnant woman

Area	Energy (k.cal)	Protein (g)	FAT (g)	VIT A (µg)	VIT C (mg)	IRON (mg)
Rural	1800	54	52	2095	42	8
Tribal	1680	58	42	2243	28	7
RDA (2010)	2250	78	30	6400	60	35

Dietary assessment was done through 24hr recall method and nutritive value of the respective diet was calculated and compared with Recommended Daily Allowances (RDA) 2010.

Rural pregnant were consuming 1800 k.cal where as 1680 k.cal by tribal pregnant woman. Similarly the other nutrients taken was for rural and tribal pregnant women were Protein 54g and 58g, Fat 52g and 42g, Vit A(B carotene) 2095 µg and 2243µg, Vit C 42g and 28g, Iron 8mg and 7mg.

Even though rural pregnant were taking slightly better nutrients in terms of energy, fat, vitamin C and Iron than the tribal pregnant women. Whereas Protein and vitamin A were consumed more by tribal than the rural pregnant. But both were deficient in all the nutrients except fat intake when compared to RDA, 2010. There is a 1/4th deficiency was observed for energy, protein, vitamin A and Vitamin C, whereas 1/3rd met for the iron that is supposed to be taken.

Women in poor rural communities often consume diets that are deficient in energy. The prevalence of chronic malnutrition is reflected in the high incidences of maternal deaths, increased risk of disease, and lower pregnancy weight gain. Daily energy intake was found to be 1436. Kcal/day. Mean weight gain was 245.9 g/week and was higher for women with lower weight. He found a significant relationship between energy intake and gestational weight gain ($P \leq 0.05$). The pregnant women consumed fewer calories than the recommended levels (Odiwuor, 2014). Potdar (2001) reported that, maternal nutrition affects birth weight offer new born, as per the standards of World Health Organization (WHO), birth weight of a baby should be 2.5 kg.

The results were clearly alarming the situation of malnutrition among the pregnant woman which is major period of human life. The practices, dietary intakes and nutritional status of the pregnant and lactating women were short of the national and international recommendations. Therefore, sustained health and nutrition education is recommended to the women and their families and communities on increased food intake, proper dietary practices and dietary diversification during pregnancy and lactation in order to improve health and nutrition outcomes of pregnant and lactating women.

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