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RESEARCH ARTICLE

ASSESSMENT OF NUTRITIONAL AND PSYCHOLOGICAL FACTORS AMONG PREGNANT WOMEN

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ABSTRACT

Pregnant women have been widely recognized as a vulnerable group from health point of view. They need more food than normal person for the proper nourishment of the growing fetus. The field of nutrition of the pregnant women, particularly in rural area, has been sadly neglected. Against this backdrop, the study was carried out among 70 pregnant women from Guntur District, Andhra Pradesh, India. A semi qualitative interview scheduled were used for the collection of Clinical and Health symptoms, Psychological factors; 24 hour recall method of diet survey was applied for the collection of dietary information. It was found that the mean energy, protein, iron, calcium, carotene and folic acid were much lower than the RDA standards.

INTRODUCTION

Each year, millions of pregnant women are confronted with serious medical illness: hypertension, diabetes, autoimmune diseases such as arthritis and lupus, influenza, significant psychiatric illness, even cancers. In the United States, over 400, 000 pregnant women a year face significant medical illness (Martin *et al.*, 2007 and ACOG, 2007). In Western Europe, approximately one in twelve women enter pregnancy with a chronic medical condition requiring pharmaceutical treatment (De Vigan, 1999). Evidence suggests a strong association between maternal nutrition and foetal growth. Poor nutritional status of the mother leads to adverse birth outcomes like low birth weight babies, preterm delivery and intrauterine growth retardation (Tomkins 2001 and Abu-Saad and Fraser, 2010). Stress, anxiety, fatigue and other psychosocial characteristics may influence the food choices women make during pregnancy, A mother's diet can affect the healthy development of her fetus and the health of her newborn (Laura Caulfield, 2005). Pregnancy is the period of dynamic change for a mother requiring a lot of care. During this period the fetus is nourished directly by the mother through placenta. Since the baby totally relies upon its mother for nourishment, the pregnant woman is to be provided with an adequate and well-balanced diet (Mudambi, 1992).

A woman's normal nutritional requirement increases during pregnancy in order to meet the needs of the growing fetus and of maternal tissues associated with pregnancy. Proper dietary balance is necessary to ensure sufficient energy intake for adequate growth of fetus without drawing on mother's own tissues to maintain her pregnancy (Mridula *et al.*, 2003).

MATERIALS AND METHODS

The study was carried out among pregnant women, sampling method was adopted for surveying the sample and 70 pregnant women were selected. The age between 20-35 Years and the list of pregnant women was collected from Anganwadi workers, working in those centers from Guntur District, Andhra Pradesh, India. A structured interview schedule was used for collection of Clinical and Health information. Psychological factors observed through Interview method. Twenty-four hours recall method of diet survey was applied for the collection of dietary information. The intake of nutrients by the respondents was calculated by using Nutritive Value of Indian Foods (Gopalan, 1991). Recommended dietary allowances suggested by the ICMR for pregnant women were utilized to assess the nutritional status.

Data Collection: Diet survey was carried out by weighing method (Rao *et al.*, 1986). Quantitative dietary assessment was done through actual weighing of raw food item. The average dietary intake of food per item was calculated and was compared with the RDA (Recommended Dietary Allowances)

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of India using the values as per 'Nutritive Value of Indian Food' (Gopalan *et al.*, 2006).

RESULTS AND DISCUSSION

Table 1 showed Psychological Factor of pregnant women, 48.5 per cent had Anxiety or depression, 67.1 per cent had the problem of insomnia, 5.7 per cent had Tearfulness, 47.1 per cent had Hopelessness, 25.7 per cent had guilty feeling, and 77.1 per cent had irritability which occurs due to Macro nutrient deficiency like protein and energy. 51.4 per cent had the problem of appetite changes due hormonal changes, 60.0 per cent had poor concentration and 20.0 per cent had epilepsy.

per cent had Morning Sickness, which can strike at any time of the day or night, sometimes begins as early as three weeks after conception. While the cause of nausea during pregnancy hormones likely play a role. 41.4 per cent had increased urination, 77.1 per cent Fatigue and it also ranks high among early symptoms of pregnancy. During early pregnancy, levels of the hormone progesterone soar which can make you feel sleepy. 67.1 per cent had Food aversions or cravings, Food cravings are common, too. Like most other symptoms of pregnancy, these food preferences can be chalked up to hormonal changes. 84.2 per cent, 84.2 per cent suffering from Headache, 38.5 per cent had Skin changes and 64.2 per cent of pregnant women were reported that they are suffering from

Table 1. Psychological Factor of pregnant women (N= 70)

S.No	Psychological Factor	No of Respondents	No of Non Respondents
1	Anxiety or depression	34 (48.5)	36 (51.4)
2	Insomnia(Sleeplessness)	47 (67.1)	23 (32.8)
3	Tearfulness	4 (5.7)	66 (94.2)
4	Hopelessness	33 (47.1)	37 (52.8)
5	guilt	18 (25.7)	52 (74.2)
6	irritability	54 (77.1)	16 (22.8)
7	appetite change	36 (51.4)	24 (34.2)
8	poor concentration	42 (60.0)	18 (25.7)
9	Epilepsy	14 (20.0)	56 (80.0)

Table 2. Clinical and Health symptoms of pregnant women

S.No	Clinical and Health Symptoms	No of Respondents N=70 (%)	No of Non-Respondents
1	Nausea with or without vomiting	62 (88.5)	8 (11.2)
2	Morning Sickness	58 (71.4)	12 (17.1)
3	Increased urination	29 (41.4)	41 (58.5)
4	Fatigue	54 (77.1)	16 (22.8)
5	Food aversions or cravings	47 (67.1)	13 (18.5)
6	Headache	59 (84.2)	11 (15.7)
7	Skin changes	27 (38.5)	43 (61.4)
8	Constipation	45 (64.2)	25 (35.7)

Table 3. Mean daily Nutrient intakes

S.No	Nutrients	Intake (Mean±SD)	RDA
1	Energy(kcal)	2017.3±98.5	2525
2	protein(g)	52.1±22.9	65
3	calcium(mg)	625.1± 36.1	1000
4	Carotene (mg)	1241.2±50.2	2400
5	Iron (mg)	14.4± 2.8	38
6	Thiamine (mg)	1.0 ±2.6	1.3
7	Riboflavin (mg)	0.9 ± 4.4	1.5
8	Niacin (mg)	10.5 ± 3.0	16
9	Vitamin C (mg)	31.8 ± 5.7	40
10	Folic acid (mg)	120.4 ± 44.9	400

For some women, serious anxiety or depression problems improve during pregnancy, suffer from a lot of sleeplessness (insomnia), sadness, tearfulness, anxiety, hopelessness, feelings of worthlessness and guilt, irritability, appetite change, or poor concentration are commonly observed among pregnant women. Stress, increased health problems are common among pregnant women low self esteem and anxieties were commonly observed due to various reasons (Aries and pape, 1999). Table 2 showed Clinical and Health complications among pregnant women. Clinical and Health complications in 88.5 per cent of pregnant women had Nausea with or without vomiting, 71.4

Constipation Sluggish bowel movement during pregnancy can lead to severe or chronic abdominal pain. Hyper pigmentation occurs in up to 90% of women during pregnancy. This begins in the first trimester and is prominently noticed in areas of normal hyper pigmentation such as nipples, areola, perineum and vulva. Both estrogen and progesterone, which have melanogenic stimulant properties, are thought to be responsible for this hyper pigmentation. Certain changes occur in normal pregnancy that would otherwise suggest liver disease. Physical findings include spider angiomas and palmar erythema, probably due to elevated oestrogen levels (Niraj Yanamandra

and Edwin Chandraharan, 2007). Table 3 Nutrient Intake shows the mean nutrient (macro and micro) intake per consumption unit per day among pregnant women. The mean calories consumption among pregnant women was 2017±98.5 k.cal. The mean protein consumption among pregnant women was 52.1±22.9 g. The mean intake of calories and protein were lower when compared to Recommended Dietary Allowances (RDA). Calcium, iron, vitamin C and folic acid were also lower than the standards. A dietary approach made from a food survey presented foods commonly consumed by population recruited indicated very monotonous eating habit combined with imbalanced diets. B-complex vitamins such as Thiamine, Riboflavin and Niacin were also lower than the standards.

Table 3 indicates the average intake of different nutrients in comparison to the RDA. Recommended Daily Allowance (RDA) is the intake of nutrients derived from the diet that keeps nearly all people in good health. It takes into account the individual variation in nutrient needs and also availability of nutrients, which may vary from diet to diet (Gopalan *et al.*, 2002). As per the RDA, the energy consumption should have been 2525 kcal/day. The average energy consumption of pregnant women was considerably low as compared to RDA. whether the purported combination of oral changes thought to occur during pregnancy (including dietary changes) such as increased consumption of carbohydrates, increased acid in the mouth from vomiting, and reduced salivary production and / or increased acidity of saliva) combine to raise the risk of dental caries in pregnant women. However, evidence to the contrary shows that women's nutrition improves during pregnancy (Cuco *et al.*, 2006). The malnutrition problems among pregnant women are very complex. The percentage incidence of the common nutritional deficiencies in pregnant women was higher. It was also found that the mean daily dietary intake of iron and folic acid of the anemic pregnant women was significantly lower than those of the non-anemic pregnant women (Subarnalata Sahoo and Basumati Panda, 2006).

The additional demand for folate during pregnancy leads to a rapid fall in red cell folate and to a high incidence of megaloblastic anemia in those women taking anticonvulsant drugs for control of epilepsy. Folate supplements should be given to all epileptic women taking anticonvulsants in pregnancy as well as before conception. Both nutrition and environment affect the ability and performance of the central nervous system. Maturation of the central nervous system is not linear. A decisive period of development represents a once-only window of opportunity that can neither be repeated nor reversed. The entire developmental period of the brain has subcritical periods, each of which may be disrupted and thereby affect the maturation and organization of the brain (Morgane *et al.*, 2002).

Conclusion

The results show that Clinical and Health complications, Psychological factors, Nutritional status of pregnant women. In the present study more clinical symptoms and Health complications as well as Psychological factors were observed among pregnant women. Nutrient intakes were also lower than the standards. To maintain good nutritional status, Balanced diets are to be maintained as per the RDA. For nutritional

supplementation iron and folic acid tablets should be taken by the pregnant women. Good environmental conditions and sufficient rest is also needed for the pregnant women.

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