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# Nutritional Status of Pregnant Women Visiting Government Hospital, Chandigarh

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**Abstract:** ***Background: Pregnancy is a phenomenon associated with dynamic changes in physical, mental and biochemical status of body and demands increased nutritional intake for developing foetus. (Shankar et al 2017).Adequate nutritional intake during pregnancy has been recognized as an important factor for healthy pregnancy and desired birth outcomes. It was found that deficiency of nutrients during gestation may cause the foetus to receive suboptimal micro and macro nutrients, causing inadequate intrauterine growth and development, inherited malformations, preterm deliveries, and pregnancy complications (Mirsanjari et al 2016). Objective: To study the nutritional status of pregnant women. Methods: A hospital based study was conducted amongst 420 randomly selected pregnant women of I, II and III trimester visiting government hospitals, Chandigarh. Nutritional status was assessed by a pre-tested general assessment questionnaire consisting of questions related to nutritional knowledge, dietary pattern and 24 hour dietary recall method was used to calculate the daily intake of nutrients. The nutrient intakes were compared with Recommended Dietary Allowance (RDA) of pregnancy. Results: Mean daily intake of energy was 1732.74 kcal and the percentage of energy from carbohydrates, proteins and fat were 71.23, 65.95 and 190.3 respectively. Although mean daily intake of protein; 54.21g , calcium; 814.54mg, iron; 16.04mg, and folate 386.51mg were below the RDA. Conclusion: The study concluded that poor nutritional knowledge and low dietary intakes of nutrients were nutritional problems of the study sample. Therefore current strategies such as iron and folic acid supplementation along with special care such as providing nutritional knowledge, special diets, regular medical and health checkups should be directed towards pregnant women to improve maternal nutritional status.***

**Keywords:** Nutrient Intake, Nutritional Status, Pregnancy, Hospital Based, Nutritional Knowledge

## 1. Introduction

Pregnancy is an anabolic process and a woman's normal nutritional requirements increases during pregnancy to meet the needs of growing foetus and the maternal tissue associated with pregnancy (Adikari *et al* 2016). The increased requirements will depend on existing nutritional status, rate of weight gain and availability of adequate nutrition and co-existing disease (Darnton-Hill *et al* 2015).

Adequate nutritional intake during pregnancy has been recognized as an important factor for healthy pregnancy and desiredbirth outcomes. It was found that deficiency of nutrients during gestation may cause the foetus to receive suboptimal micro and macro nutrients, causing inadequate intrauterine growth and development, inherited malformations, preterm deliveries, and pregnancy complications (Mirsanjari *et al* 2016).

Pregnant women are vulnerable to inadequate nutritional status because of the high nutrient demands of pregnancy (Lee *et al* 2013). In developing countries women are more prone to risk of malnutrition during pregnancy. Factors such as socio-economic constrain, poor diet quality and frequent reproductive cycle increases the risk of malnutrition.

Malnutrition resulting from inadequate dietary intake is associated with growth failure and development of protein-energy malnutrition, especially during the gestation. Pregnant women need additional protein for initial deposition of pregnancy related tissue and to maintain new tissue. It was recognised that poor growth results not only from a deficiency of protein and energy but also from inadequate intake of micronutrients that are vital during pregnancy. (Adikari *et al* 2016)

During preconception and pregnancy a good dietary intake and adequate nutritional status contributes to healthy birth outcome.

Under nutrition and suboptimal diets with poor energy and micronutrients during pregnancy have been associated with poor foetal growth, pre-term delivery, poor infant survival and increased risk of chronic disease in later life. Suboptimal prenatal diets have also been associated with gestational diabetes and pre-eclampsia in the mother and increased risk of stillbirth and large-for-gestational age in the baby (Ahmed 2013).

## 2. Methods

*Sample size*
The present study was conducted on 420 pregnant women in their 1st, 2nd, and 3rd trimesters.

*Setting*
The study was carried amongst randomly selected pregnant women. A total of 420 pregnant women in 1st, 2nd, and 3rd trimester visiting government hospitals were studied.

*Assessment of nutritional status*
The nutritional status was assessed by using a pre-tested questionnaire .

*Assessment of Dietary Intake*
The daily dietary information was calculated using a 24 hour dietary recall method. In this recall method, dietary data is

obtained from the respondent through an oral questionnaire of diet survey, using a set of 'standardised cups' suited to local condition.

Dietary intake of the respondent was calculated using software called diet cal (version 8.0) a tool for dietary assessment and planning. Questions regarding the number of meals consumed daily, changes in food habits during pregnancy and myths related to food habits were asked. The respondent is asked about the types of food preparations made according to the meal pattern i.e., during breakfast, lunch, afternoon tea and dinner, during previous 24 hours.

The women were asked to provide as much information as possible about serving size, method of cooking and all details pertaining to food consumption i.e. amount of sugar added in tea/milk, rice taken as boiled/fried, ghee/butter added to dhal or vegetable, chapatti taken as buttered/unbuttered., the size of katori, used for amount of dal/rice(gm), dry vegetables(gm) and curd, size of chapatti, parantha and the size of glass used for the consumption of milk, juices and other beverages.

Dietary allowances suggested by Indian Council of Medical Research (ICMR) for pregnant women (sedentary worker) were utilized to assess the adequacy of nutrient intake by the subjects. The percentage of RDA met was compared with the actual RDA.

## 3. Results

***Socio-Demographic Profile***

Out of the total respondents, 280 respondents enrolled for the study were found to be living in joint families. Suggest that the trend of living in joint families still exist. Only one third(n=140) of the respondents were living in nuclear family.

The collected data was categorised based on the education qualification of the respondents. The results show that majority of the respondents 64.27% (n=270) were found to be educated up to high school and intermediate level and nearly 26.19% (n= 110) had pursued higher education. Few respondents that is only 9.52% (n= 40) were found to be illiterate.

The collected data was categorized according to the occupation of the respondents. Among the respondents majority 88.09% were home maker, rest of the respondents were employed for wages (11.88%). Amongst the employed women (8.8%) were either skilled or semi skilled worker such as home tuitions, parlour work, tailoring, cooks, labour etc.

Majority of the respondents nearly 43% (n=181) had monthly income 11,362-15,187. Followed by 27.61% (n= 116) of the respondents varying monthly income in the range greater than 15,187. However it was interesting to see that a very little percent of respondent (0.47) were falling below poverty line.

Half of the respondents enrolled in the study belong to upper lower class followed by upper middle II 24.04%.Hence it can be understood that both HIG and LIG respondents visit the government facility for medical intervention however, the socio economic status reflects that majority of people visiting government hospitals belong to low income group as compared to high income group.

***Dietary pattern***

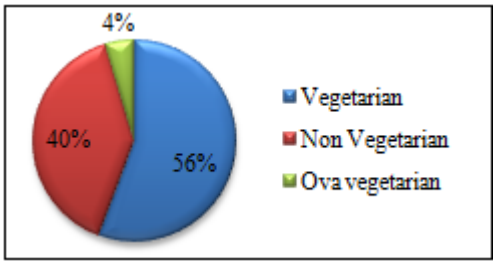


**Figure 1:** Distribution on the basis of eating pattern

Nearly 55% of the respondents were found to be vegetarian followed by nearly 40% of the respondents who had non vegetarian eating habits. Very few (n=19) were ova vegetarian.

Nearly 63% of the respondents followed a usual three meal pattern. However few respondents (n=78) had four or more than four meals. During pregnancy it is advisable to have small meals at small interval as it avoids discomfort which a woman might feel after having meals.

Out of the total respondents 51.67% reported changes in their food habits during pregnancy due to various reasons such as acidity, indigestion, vomiting and nausea. While the remaining respondents do not have any changes in the eating habits.

The most common change in the food habits of the respondents was to avoid fried food and high spicy food which was found to be nearly 75.87% (n=154).

Majority of the respondents nearly 88% (n=371) had sources of nutritional knowledge during pregnancy. The most common sources were found to be parents, doctors, gynaecologist and anganwari workers with 37.86%, 26.19% and 8.33% respectively.

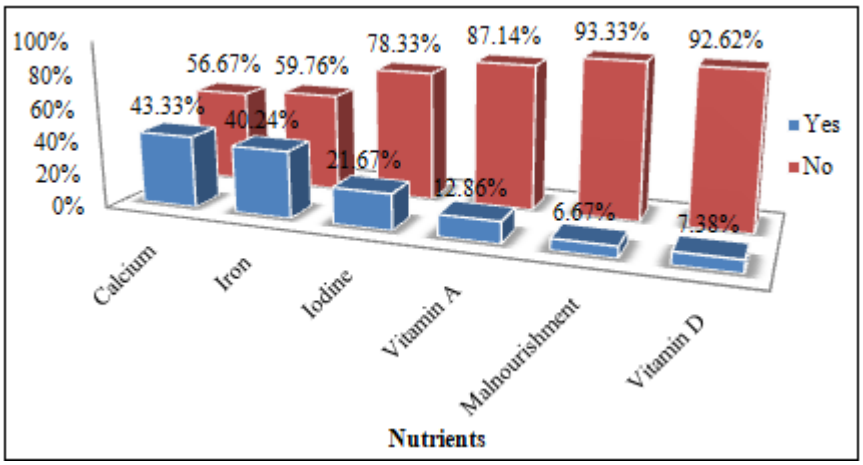


**Figure 2:** Distribution according to knowledge about the importance of various nutrients

Out of 420 pregnant women, maximum numbers of respondents 43.33% were having knowledge about the importance of calcium during the period of pregnancy followed by nearly 40.24% about iron. However very few women had knowledge regarding the importance of iodine, vitamin A, malnourishment and vitamin D

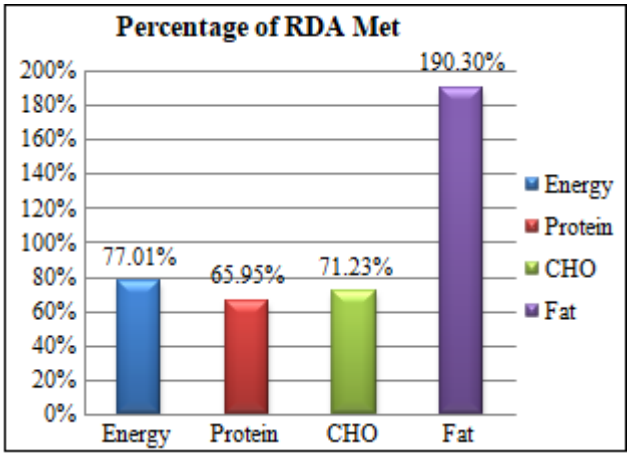


**Figure 3:** Percentage of RDA met (macronutrients)

**Energy:** During pregnancy the requirement of calories increases, as more energy is required to meet the daily needs of both the mother and growing fetus. The mean energy intake of pregnant women was 1732.74 kcal/day and the percentage of RDA met was 77.01%. The energy intake of the respondent was found significantly deficient as compared to RDA. The result of the present study is similar to the study conducted by Singh (2009) which showed high deficiency of protein and energy (20-40%) among pregnant women.

As compared to the present study in a study conducted by Pathak *et al* (2004) calorie intake was less than 50% of RDA in 19.3% of the pregnant women.

**Protein:** Protein is considered to be one of the important nutrients. Their requirement increases during pregnancy as protein are required to build the tissues of the fetus. The mean protein intake of pregnant women was 54.21g/day and the percentage of RDA met was 65.95%. The protein intake of the respondent was found significantly deficient as compared to RDA. However many of the respondents were also advised to take protein powder with milk in order to meet the protein requirements. The findings of the resent study are quite similar to the study conducted by Yajnik *et al* (2008) in which the protein intake was low (65g/day) as compared to the RDA and in another study conducted by Pathak *et al* (2004) in which the protein intake was 50% less than the RDA.

FATS: Fat is also essential in the diet as fats are not only the concentrated sources of energy but also supplies essential fatty acids. Apart from this, they help in making the diet more palatable.

The mean fat intake of pregnant women 57.10mg/day and the percentage of RDA met was 190.3%. The fat intake of the respondent was found higher as compared to RDA. This could be because of consumption of readily available cow and buffalo milk and the consumption of ghee during the last few months of pregnancy.

## 4. Conclusion

Malnutrition is directly related to inadequate dietary intake as well as disease specifically pregnant women are more vulnerable to micronutrient deficiencies due to increased demands. It is a well known that an undernourished mother inevitably gives birth to an undernourished baby, perpetuating an intergenerational cycle of undernutrition (UNICEF). They are also less likely to be able to provide food and adequate care for their children.

The majority of respondents in the present study were vegetarians and consumed a diet poor in iron. Majority of respondents reported the consumption of tea along with breakfast thus limiting iron absorption and many of them also skipped major meals of the day such as breakfast, lunch or dinner, this may also be a contributory factor to the high prevalence of anaemia. Efforts must be initiated for adopting specific interventional measures with regard to nutritional education, special diets and care during pregnancy to improve the maternal nutritional status

Dietary intake data indicated poor nutritional intake by the pregnant women possibly due to poor purchasing power or lack of knowledge regarding the consumption of healthy diet, which further increases the need of strengthening nutritional education in order to improve the nutritional and health status of pregnant women. The present study suggests

that improvement in maternal nutrition during pregnancy is essential for ensuring the optimum growth of the fetus and health of the mother.

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