



ISSN: 0976-3031

Available Online at <http://www.recentscientific.com>

CODEN: IJRSFP (USA)

International Journal of Recent Scientific Research  
Vol. 10, Issue, 06(G), pp. 33134-33136, June, 2019

**International Journal of  
Recent Scientific  
Research**

DOI: 10.24327/IJRSR

## Research Article

# ASSESSMENT OF NUTRITIONAL STATUS OF ANAEMIC PREGNANT WOMEN OF FATEHABAD DISTRICT OF HARYANA

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DOI: <http://dx.doi.org/10.24327/ijrsr.2019.1006.3612>

### ARTICLE INFO

#### Article History:

Received 10<sup>th</sup> March, 2019  
Received in revised form 2<sup>nd</sup>  
April, 2019  
Accepted 26<sup>th</sup> April, 2019  
Published online 28<sup>th</sup> June, 2019

### ABSTRACT

Pregnancy is a state of physiological stress, metabolic and hormonal changes in the life of a woman. During this period, a foetus develops in the uterus of the mother resulting extensive changes in maternal body composition. The development of the foetus is completely dependent on the health and well being of the mother, consequently there is a significant increase in nutritional requirements with the advancement of pregnancy and if the mother does not have enough food, the baby may be small and weak (Singh *et al.*, 2012).

#### Key Words:

Pregnancy, anaemia, nutritional assessment

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## INTRODUCTION

Anaemia is one of the most commonly encountered medical disorders during pregnancy. In developing countries, it is a cause of serious concern as besides many other adverse effects on the mother and the foetus, it contributes significantly to high maternal mortality. Kumar (2014) reported about 20-40% of maternal deaths in India are due to anaemia. According to NFHS-4 (2015-16) prevalence of anaemia among women was found to be over 60% in Jharkhand, Haryana, West Bengal, Bihar and Andhra Pradesh, and less than one-third in Mizoram (25%), Manipur (26%), Nagaland (28%), and Goa (31%). Pregnant women have special dietary needs, hence, eating a balanced diet before, during and after pregnancy is one part of good health. Pregnant women should choose foods and beverages that are "nutrient-dense" (Raman and Shatrughna, 2010).

## MATERIALS AND METHOD

### Locale of the study

The research was carried out in rural area of Fatehabad district of Haryana state.

### Sampling Procedure

#### Selection of Villages

Fatehabad district of Haryana state were selected purposively. Dhanger, Kharakheri of Fatehabad block and Bhattu Kalan,

Bhattu Mandi, of Bhattu block of Fatehabad district of Haryana were selected randomly.

### Selection of Respondent

The present study was conducted on anaemic pregnant women. One hundred fifty pregnant women were selected from the selected villages of selected blocks of Fatehabad district of Haryana.

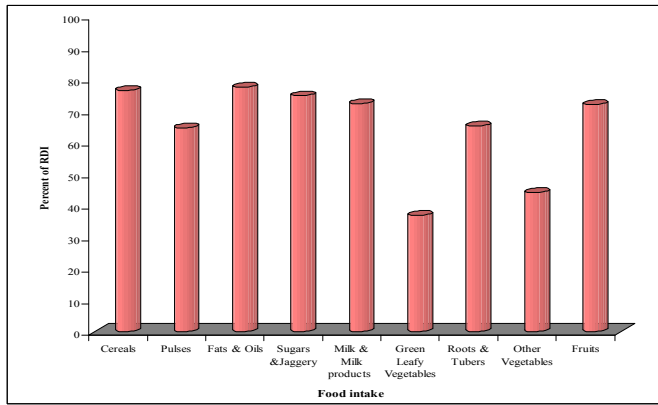
**Table 1** Mean daily food intake (g/day) of selected anaemic pregnant women of Fatehabad district

Food Stuffs (g)	RDI	Mean daily food intake	(n=150)	
			Z value	Overall intake (% of RDA)
Cereals	330	252.59±31.51	42.55**	76.54
Pulses	75	48.53±18.32	25.02**	64.70
Fats & Oils	35	27.15±8.98	18.81**	77.57
Sugars & Jaggery	30	22.46±4.10	31.85**	74.86
Milk & Milk products	500	362.12±74.32	49.97**	72.42
Green Leafy Vegetables	150	55.27±29.31	55.98**	36.84
Roots & Tubers	200	130.50±65.34	18.42**	65.25
Other Vegetables	200	88.20±43.90	44.10**	44.10
Fruits	200	144.20±21.32	45.33**	72.10

Values are mean ±SD \*\*Significant at 1% level  
RDI- Recommended Dietary Intake (ICMR 2010)

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**Fig 1** Percent food intake of selected anaemic pregnant women of Fatehabad district

consumption of cereals was significantly ( $p \leq 0.01$ ) lower in selected anaemic pregnant women.

**Pulses**

Pulses are the major source of protein in Indian diets. Table 1 indicates that daily mean intake of pulses among selected anaemic pregnant women were 48.53 g which were 18.32 per cent of Recommended Dietary Intake (RDI).

**Fats and oils**

Daily mean intake of fats and oils by the pregnant women was 27.15 g which was 77.57 per cent of RDI.

**Sugar and Jaggery**

The intake of sugar and jaggery was found to be significantly ( $p \leq 0.01$ ) lower than the RDI in pregnant women, which was 74.86 per cent of the RDI.

**Milk and Milk Products**

The mean daily intake of milk and milk products by pregnant women were found 362.12 g which was 72.42 per cent of the RDI and significantly ( $p \leq 0.01$ ) lower than RDI (Table 1).

**Green leafy Vegetables**

The data in Table 1 revealed that the daily mean intake of green leafy vegetables of anaemic pregnant women was significantly ( $p \leq 0.01$ ) lower than the RDI; i.e. only 36.84 per cent of the RDI.

**Roots and Tubers**

The mean daily intake of roots and tubers by anaemic pregnant women (130.50 g) were significantly lower than RDI.

**Other Vegetables**

Mean daily intake of other vegetables by pregnant women was 88.20 g which was 44.10 per cent of RDA, it was significantly ( $p \leq 0.01$ ) lower than RDI.

**Fruits**

Mean daily intake of fruits by pregnant women was found to be 144.20 g which was 72.10 per cent of RDA. The intake was significantly ( $p \leq 0.01$ ) lower than RDA in pregnant women.

**Mean daily Nutrient Intake of Selected Anaemic Pregnant Women**

Data on mean daily nutrient intake by the selected pregnant women has been presented in Table 2.

**Energy**

Mean daily intake of energy among the pregnant women was found to be 1672.06 Kcal which was 64.80 per cent of RDA and significantly ( $p \leq 0.01$ ) lower than RDA.

**Protein**

Mean daily nutrient intake of protein in pregnant women was 52.15 g which was 66.85 per cent of RDA, it was significantly ( $p \leq 0.01$ ) lower than RDA.

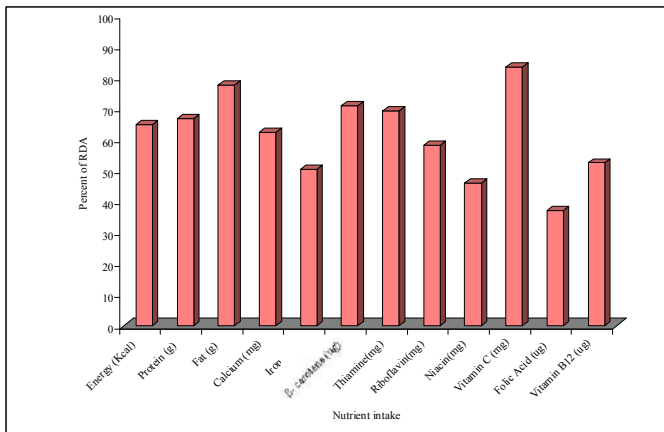
**Fat**

The mean daily intake of fat in pregnant women was found to be 23.29 g which was 77.63 per cent of the RDA i.e. significantly ( $p \leq 0.01$ ) lower than the RDA.

**Table 2** Mean daily nutrient intake (g/day) of selected anaemic pregnant women of Fatehabad district

Nutrients	RDA	Mean daily nutrient intake	Z value	Overall intake (% of RDA)
Energy (Kcal)	2580	1672.06±116.55	54.85**	64.80
Protein (g)	78	52.15±0.48	53.73**	66.85
Fat (g)	30	23.29±1.40	33.52**	77.63
Calcium (mg)	1200	749.05±41.99	37.58**	62.42
Iron (mg)	35	17.62±0.20	38.17**	50.34
β- carotene (ug)	6400	4538.63±350.47	66.45**	70.91
Thiamine(mg)	1.3	0.90±0.08	42.60**	69.23
Riboflavin(mg)	1.6	0.93±0.01	48.21**	58.125
Niacin(mg)	16	7.35±2.23	48.05**	45.93
Vitamin C (mg)	60	50.12±5.23	34.82**	83.53
Folic Acid (ug)	500	185.00±4.56	69.03**	37.00
Vitamin B <sub>12</sub> (ug)	1.2	0.63±1.05	27.12**	52.50

Values are mean ±SD \*\*Significant at 1% level  
RDA- Recommended Dietary Allowances (ICMR 2010)



**Fig 2** Percent nutrient intake of selected anaemic pregnant women of Fatehabad district

**RESULTS**

**Mean daily food Intake of Selected Anaemic Pregnant Women**

The information regarding mean daily food intake of selected anaemic pregnant women has been depicted in Table 1. The intake of different food groups has been given as under:

**Cereals**

Mean daily cereals intake of selected anaemic pregnant women were 252.59 g, which were 76.54 per cent of RDI. The

### Calcium

The mean daily intake of calcium was 749.05 mg which was 62.42 per cent of the RDA. The intake was significantly ( $p \leq 0.01$ ) lower than RDA in pregnant women.

### Iron

Mean daily intake of Iron in pregnant women was found to be 17.62 mg which was 50.34 per cent of RDA. The intake was significantly ( $p \leq 0.01$ ) lower than RDA in pregnant women.

### $\beta$ - Carotene

The mean daily intake of  $\beta$ - carotene was 4538.63 $\mu$ g in the pregnant women i.e. only 70.91 per cent of the RDA, which was significantly ( $p \leq 0.01$ ) lower than the RDA.

### Thiamine (Vitamin B<sub>1</sub>)

The mean daily intake of thiamine by pregnant women was found to be 0.90 mg, which was significantly ( $p \leq 0.01$ ) lower than the RDA. The overall percentage of thiamine was 69.23.

### Riboflavin (Vitamin B<sub>2</sub>)

The mean daily intake of Riboflavin in pregnant women was 0.93 mg, which was significantly ( $p \leq 0.01$ ) lower than the RDA i.e. 58.12 %.

### Niacin (Vitamin B<sub>3</sub>)

The mean daily intake of Niacin was found to be 7.35 mg, which was 45.93 % of RDA and significantly ( $p \leq 0.01$ ) lower than the RDA.

### Vitamin C

Perusal of data regarding nutrient intake showed that the mean daily intake of Vitamin C was found to be 50.12 mg i.e. 83.53 per cent of the RDA.

### Folic Acid

The data depicted in table 2, revealed that the daily mean intake of folic acid in pregnant women was significantly ( $p \leq 0.01$ ) lower than the RDA i.e. 185.00  $\mu$ g (37.00 %).

### Vitamin B<sub>12</sub>

The mean daily intake of B<sub>12</sub> vitamin in pregnant women was 0.63  $\mu$ g, which was only 52.50 per cent of the RDA and significantly ( $p \leq 0.01$ ) lower than RDA.

## DISCUSSION

At the end of the study, based on results, data revealed that consumption of green leafy vegetables is low, which might be due to the fact that women did not like the taste of green leafy vegetables and also was not aware of the importance of green leafy vegetables in diet. Consumption of jaggery and other vegetables was lower than RDI. Overall, consumption of all food stuffs was lower than RDI due to low knowledge of importance of foods in diet. It was found that mean daily intake of all the nutrients intake were significantly ( $p \leq 0.01$ ) lower than Recommended dietary allowances. Lower intake of nutrients might be due to lower consumption of cereals, pulses, fats & oils and sugar & jaggery. The findings of present study are in close agreement with those reported by Cheng *et al.*

(2009); Khoushabi and Saraswathi (2010); and Adikari *et al.*,(2016).

## CONCLUSION

Generally, from the results and discussions, it may be concluded that mean daily intake of food and nutrients by the selected anaemic pregnant women were significantly lower than their respective RDIs and RDAs. The low intake of all the food items among pregnant women was basically due to habit of skipping breakfast, lack of purchasing power and lack of awareness on nutritional importance of different food stuffs. Majority of the respondents had inadequate knowledge level regarding nutrition. So there is an urgent need to educate the pregnant women about the importance of balanced diet. Nutrition education and preventive health measures are essential factors for both mothers and foetus which must be taken care of as each foetus is essential for healthy future generation of country.

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