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A correlative study of nutrient intake with certain selected variables among the rural women during pregnancy in Meerut Block

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ABSTRACT

A survey was conducted on 300 women aged 15-30 years during their pregnancy in Meerut block of district Meerut. An interview schedule was used for collection of information related to socio-economic and demographic characteristics and nutritional intake. Food consumed by the women for three consecutive days was used to ascertain the nutrient intake. Significant and positive impact of family income on nutrient intake and significant and negative impact of number of children and members in the family on nutrient intake were observed among the rural pregnant women.

Key words : Nutrient, Pregnancy, Body Mass Index, Obstetric

INTRODUCTION

Maternal nutrition forms, one of the important parameters affecting the course of pregnancy and obstetric outcome (Allen, 2000). Seventy five per cent of foetal growth is related to the maternal nutritional status (Kalra and Goyal, 2002). A women who has a history of good nutritional status and who is well nourished at the time of conception has an increased chance of delivering a healthy term baby of normal birth weight (2.5 kg to 4.6 kg).

Nutritional adequacy is one of the key elements before, during and after pregnancy for support of foetal growth and the maintenance of the mother's body. Due to inadequate intake of nutrient in diet like energy, protein, vitamin, iron and calcium etc. various deficiency disorders occur.

MATERIALS AND METHODS

The present study was conducted on 300 rural women during pregnancy in Meerut block, which were selected through multistage stratified sampling technique. An interview schedule was used for collection of information regarding nutritional intake and family background. Food consumed by the women for three consecutive days was

used to ascertain the nutrient intake. The data pertaining to various selected factors affecting nutritional status of the women during their pregnancy in Meerut block were analysed by using the correlation coefficients and test of significant for drawing valid conclusions.

RESULTS AND DISCUSSION

The results obtained from the present investigation are presented below :

It is clear from Table 1 that positive and significant correlations were observed between all the nutrient intake except vitamin A and niacin with age of the rural pregnant women in the present study ($p < 0.05$) *i.e.* as the age of the women increased, the nutrient intake of all except vitamin A and niacin increased and *vice-versa*. While the negative and significant correlations were observed between nutrient intake of vitamin A and niacin with age of the rural pregnant women ($p < 0.05$) *i.e.* as the age of the women increased, the nutrient intake of vitamin A and niacin decreased and *vice-versa*.

The data of Table 2 reveal that negative and significant correlations were observed between all the nutrient intake with number of children among the rural

Table 1: Correlation between age with nutrient intake among the rural pregnant women

Parameter	Unit	Statistical values				
		Mean	SD	r	t	p
Age of women	Years	25.08	3.21			
Calories	Kcal	2196.70	319.82	+0.114	1.981	< 0.05
Protein	g	48.80	11.41	+0.144	2.513	< 0.05
Calcium	mg	478.65	59.33	+0.121	2.104	< 0.05
Vitamin A	µg	2117.33	258.53	-0.111	1.963	< 0.05
Vitamin C	mg	38.70	3.03	+0.155	2.708	< 0.05
Iron	mg	16.20	2.43	+0.168	2.942	< 0.05
Fat	g	41.62	5.83	+0.132	2.299	< 0.05
Niacin	mg	7.31	2.83	-0.119	2.069	< 0.05
Carbohydrate	g	543.58	78.04	+0.124	2.157	< 0.05
Fibre	g	12.46	1.25	+0.146	2.548	< 0.05

Table 2 : Correlation between number of children with nutrient intake among the rural pregnant women

Parameter	Unit	Statistical values				
		Mean	SD	r	t	p
Number of children		2.55	0.64			
Calories	Kcal	2196.70	319.82	-0.159	2.780	< 0.05
Protein	g	48.80	11.41	-0.141	2.459	< 0.05
Calcium	mg	478.65	59.33	-0.194	3.414	< 0.05
Vitamin A	µg	2117.33	258.53	-0.141	2.459	< 0.05
Vitamin C	mg	38.70	3.03	-0.121	2.104	< 0.05
Iron	mg	16.20	2.43	-0.201	3.542	< 0.05
Fat	g	41.62	5.83	-0.123	2.140	< 0.05
Niacin	mg	7.31	2.83	-0.129	2.246	< 0.05
Carbohydrate	g	543.58	78.04	-0.117	2.034	< 0.05
Fibre	g	12.46	1.25	-0.141	2.459	< 0.05

Table 3 : Correlation between number of members in the family with nutrient intake among the rural pregnant women

Parameter	Unit	Statistical values				
		Mean	SD	r	t	p
Number of members		4.92	1.67			
Calories	Kcal	2196.70	319.82	-0.161	2.817	< 0.05
Protein	g	48.80	11.41	-0.121	2.104	< 0.05
Calcium	mg	478.65	59.33	-0.121	2.104	< 0.05
Vitamin A	µg	2117.33	258.53	-0.116	2.016	< 0.05
Vitamin C	mg	38.70	3.03	-0.154	2.691	< 0.05
Iron	mg	16.20	2.43	-0.185	3.250	< 0.05
Fat	g	41.62	5.83	-0.123	2.140	< 0.05
Niacin	mg	7.31	2.83	-0.132	2.299	< 0.05
Carbohydrate	g	543.58	78.04	-0.189	3.323	< 0.05
Fibre	g	12.46	1.25	-0.113	1.963	< 0.05

pregnant women in the present study ($p < 0.05$) *i.e.* as the number of children of the women increased, the nutrient intake of all nutrients decreased and *vice-versa*.

Statistically, significant and negative correlations were

observed between all the nutrient intake with number of members in the family among the rural women ($p < 0.05$) *i.e.* as the number of members of the women increased, the nutrient intake of all nutrients decreased and *vice-*

Table 4 : Correlation between body mass index with nutrient intake among the rural pregnant women

Parameter	Unit	Statistical values				
		Mean	SD	r	t	p
Body mass index		23.13	1.59			
Calories	Kcal	2196.70	319.82	+0.126	2.193	< 0.05
Protein	g	48.80	11.41	+0.119	2.069	< 0.05
Calcium	mg	478.65	59.33	+0.133	2.317	< 0.05
Vitamin A	µg	2117.33	258.53	+0.185	3.250	< 0.05
Vitamin C	mg	38.70	3.03	-0.140	2.441	< 0.05
Iron	mg	16.20	2.43	+0.185	3.250	< 0.05
Fat	g	41.62	5.83	+0.114	1.981	< 0.05
Niacin	mg	7.31	2.83	-0.165	2.888	< 0.05
Carbohydrate	g	543.58	78.04	+0.164	2.870	< 0.05
Fibre	g	12.46	1.25	+0.117	2.034	< 0.05

Table 5 : Correlation between family monthly income with nutrient intake among the rural pregnant women

Parameter	Unit	Statistical values				
		Mean	SD	r	t	p
Family monthly income	Rs.	4791.00	2647.50			
Calories	Kcal	2196.70	319.82	+0.160	2.798	< 0.05
Protein	g	48.80	11.41	+0.115	1.998	< 0.05
Calcium	mg	478.65	59.33	+0.138	2.405	< 0.05
Vitamin A	µg	2117.33	258.53	+0.144	2.512	< 0.05
Vitamin C	mg	38.70	3.03	+0.146	2.548	< 0.05
Iron	mg	16.20	2.43	+0.134	2.334	< 0.05
Fat	g	41.62	5.83	+0.170	2.978	< 0.05
Niacin	mg	7.31	2.83	+0.150	2.619	< 0.05
Carbohydrate	g	543.58	78.04	+0.162	2.834	< 0.05
Fibre	g	12.46	1.25	-0.126	2.193	< 0.05

versa (Table 3).

It is evident from Table 4 that positive and significant correlations were observed between all the nutrient intake except vitamin C and niacin with body mass index of the rural pregnant women ($p < 0.05$) *i.e.* as the body mass index of the women increased, the nutrient intake of all except vitamin C and niacin increased and *vice versa*. While the negative and significant correlations were observed between nutrient intake of vitamin C and niacin with body mass index of the rural pregnant women ($p < 0.05$) *i.e.* as the body mass index of the women increased, the nutrient intake of vitamin C and niacin decreased and *vice versa*.

It is clear from Table 5 that statistically, significant and positive correlations were observed between all the nutrient intake except fibre with family monthly income of the rural pregnant women ($p < 0.05$) *i.e.* as the family monthly income increased, the nutrient intake of all except fibre also increased and *vice versa*. While the negative

and significant correlation was observed between nutrient intake of fibre with family monthly income ($p < 0.05$) *i.e.* as the family monthly income increased, the nutrient intake of fibre decreased and *vice versa*.

Findings of the present study *i.e.* nutrient intake positively correlated with age, body mass index, family income and negatively with number of children and members in the family are supported by Shukla *et al.* (2007) in their study.

Conclusion:

Nutritional status of rural pregnant women was significantly influenced by their age, body mass index, number of children, members and income of the family. Significant and positive impact of family income on nutrient intake and significant and negative impact of family income on nutrient intake and significant and negative impact of children and members in the family on nutrient intake were observed among rural women during pregnancy.

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