

Nutritional Status of Patients admitted to Obstetric ward of Mahatma Gandhi Medical College & Hospital, Jaipur

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Abstract

Healthy diet and lifestyle play a vital role in prevention of chronic and debilitating diseases. Various researches have shown a significant role of good nutrition and diet in prevention of gynaecological problems like uterine leiomyoma, endometriosis, polycystic ovary disease (PCOD) and malignancies. A healthy diet including fruits and vegetables, Mediterranean diet, green tea, Vitamin-D and plant-derived natural compounds have proved their positive role on gynaecological problems, while some foods have shown a negative impact on gynaecological health that include tea, coffee, red meat etc. Present research was planned to find out the general information, anthropometric data, biochemical reports, their clinical sign & symptoms and diet & nutrient intake and nutritional diagnosis of patients was seen in terms of malnourished, well nourished, mild/moderate nourished or anemic. The present research work showed that 80% of patients were in the range of Well nourished while 13.3% patients were found in the range of mild or moderate malnourished. Two out of 30 patients were found malnourished.

Introduction

Women are affected globally by a number of gynaecological problems like malignancies, endometriosis, polycystic ovary syndrome etc. These problems may decrease quality of life in the form of many bothersome symptoms like heavy menstruation, debilitating pelvic pain, hyperandrogenism, infertility or even death may be a consequence in severe cases. Majority of these problems don't have any proper medical cure. Majorly the medical treatment provide symptomatic relief, moreover these may have very grave side effects i.e. interference with pregnancy or have risk of disease recurrence [Azziz et. al., 2005; Cardozo et. al., 2012; Simoens et. al., 2012].

Nutrition and health have been among the most popular subjects for researchers. Role of nutrition and diet in prevention of gynaecological problems has long been a matter of debate [Norman et. al., 2002; Parazzini et. al., 2013; Sirmans et. al., 2013; Castello et. al., 2014; Pavone et. al., 2018; Tinelli et. al., 2021]. Many research studies show that an antioxidant rich diet including fruits, vegetables, green tea, vitamins and plant-derived

compounds has a preventive role in gynaecological problems than a diet rich in animal or dietary fats, red meat, and alcohol [Tinelli et. al., 2021; Parazzini et. al., 2013; Gonzoloz et. al., 2011; Castello et. al., 2014]. Thus a better understanding of the role of diet in gynaecological problems can change the perspective about development, progression and generation of their adverse effects on women health. This can guide many researchers for the development of innovative diagnostic and therapeutic approaches to reduce their occurrence. Proper nutrition counseling can help patients in identification and avoidance of problematic foods.

As lot of work has been done on various aspects of gynaecological problems but no work has been carried out on the study of nutritional status of pregnant females admitted to hospital for delivery. Therefore, present study was planned to find out nutritional status of pregnant females admitted for delivery in hospital.

Rationale of the study

Timely nutritional diagnosis may help in planning of suitable plan of treatment that may save life of a person.

Research Methodology

A prospective observational study was conducted on 30 patients admitted to obstetric ward of Mahatma Gandhi Medical College & Hospital, Jaipur.

Phase 1: Sample selection was done using purposive sampling method.

Sample size: 30 patients were taken who were admitted to obstetric ward.

Inclusion criteria

1. Patient should be in the age group of 18 - 35 years of age.
2. Patient should be cooperative.

Exclusion criteria

1. Patient below 18 and above 35 years of age
2. Severely ill patient admitted in ICU
3. Unwilling patient

Phase 2: Collection of general information: Following general information of patients were collected from IPD record and by interviewing patient or attendant -

Name:

Age:

Place:

Education: Illiterate/Primary/Metric/Graduate/ Post-Graduate

Working Status of the Respondent: Working/ Non Working

Type of Activity: Sedentary/Moderate/ Heavy Worker

Economic status : LIG/ MIG/ HIG

Phase 3: Assessment of nutritional status -

3.1 Anthropometric Measurement

- Weight:
- Height:
- IBW AS PER GESTATIONAL AGE:

3.2: Biochemical data

Different types of biochemical parameters like haemoglobin, blood pressure, temperature, pulse rate, thyroid stimulating hormone, blood sugar, platelets, etc. were studied.

3.3 Clinical Signs & Symptoms

Patients were examined clinically for backache, pedal oedema, weakness, anorexia, anaemia, loss of appetite and taste changes, fatigue, headache, nausea/ vomiting, diarrhoea, constipation etc.

3.4 Dietary History

- 24 hrs. - Home Recall

Time	Meal	Menu	Quantity	Energy	Protein	Cholesterol	Fat	Sodium	Fibre	Iron	Calcium	Vit-C.

Table 1: Sample table to record patient's 24 hour nutrient intake

Home diet recall for 24-hour's food intake is a well structured format that captures food intake details. The data collected from 24 hour dietary recall was used to calculate nutrient intake of all patients using IFCT 2017 tables.

- Empty calories intake Through food frequency

Food Item	Daily	Weekly	Fortnightly	Monthly	Total Empty Calories Intake
Oil					
Sugar					
Cold drink / Sharbat / Juice					
Pickles / Fried food / Junk food					
Alcohol					
Total					

Table 2: Sample table to show patient's empty calorie intake/ day
Empty calorie intake was noted using the food frequency questionnaire.

Result & Discussion

In the present study, data was collected to find out the nutritional status of patients admitted in obstetric ward in Mahatma Gandhi Medical College & Hospital, Jaipur. The data collection was done as shown in research methodology & presented under following subheadings -

1. Demography of patients

Parameters		Total number of patients (N=30)	Percentage
Age	20 - 24 years	12	40%
	25 – 28 years	10	33.3%
	29 – 32 years	4	13.3%
Place	Jaipur	23	76.6%
	Tonk	3	10%
	Kaurali	3	10%
	Naugaur	1	3.33%
Educational status	Graduate	13	43.3%
	Metric	14	46.6%
	Primary	3	0.9%
	Illiterate	0	0%

Working status	Working	3	10%
	Non working	27	90%
Type of activity	Sedentary	8	26.6%
	Moderate	10	33.3%
	Heavy	12	40%
Economic status	LIG	9	30%
	MIG	21	70%
	HIG	0	0%

Table 3: Patient's general information

Patient's demographic profile included information regarding name, date of birth and address, working status, economic status, activity pattern etc. 40% patients were in the age group of 20 - 24 years, while 33% were found to be in the age group of 25 - 28 years. Majority of patients were from Jaipur district only as shown in table 3. Educational status showed that 43.3% patients were graduate while 46.6% patients were metric pass. 90% patients were non working as in last trimester, many working females have also taken leaves or they had taken leaves or left the jobs for rest and reduced working capacity. When activity pattern was studied, it was found that patients were related to all types of working patterns like sedentary, moderate and heavy activity without any statistically significant difference.

2. Assessment of nutritional status

2.1 Anthropometric measurements

Parameters		Total number of patients (N=30)	Percentage
Mean Height		152.2 cm	
Mean weight		63 kg	
Height (cm)	141 – 150	1	3.33%
	151 – 160	21	70%
	> 161	8	26.66%
Weight (kg)	41 - 50	3	10%
	51- 60	7	23.3%
	61- 70	11	36.6%
	> 70	4	13.3%

Weight gain as per pregnancy	Normal	15	50%
	Underweight	3	10%
	Overweight	9	30%
	Obese	3	10%

Table 4: Anthropometric data

Anthropometric data includes information related to human body size and shape. Anthropometric measurements include weight, height, body mass index (BMI). Mean height of patients was found in the range of 152.2 cm and mean weight was 63 kg. It means that weight gain during pregnancy was normal. 70% patients showed height between 151 - 160 cm while 26% showed height >160 cm. Majority of patients (36.6%) showed weight between 61 - 70 kg. 50% patients showed normal weight gain while 30% patients came under the category of overweight.

2.2 Biochemical reports

Parameters	Variables	Total number of patients (N=30)	Percentage
Haemoglobin (11.5to16.5g/dl)	Normal	18	60.00%
	Low	9	30.00%
	High	0	0.00%
Temperature (98.6°F or 37°C)	Normal	13	43.30%
	Low	10	33.30%
	High	7	23.30%
Blood pressure (120/80 mm of Hg)	Normal	7	23.30%
	Low	8	26.60%
	High	14	46.60%
Pulse (60-100 bpm)	Normal	30	100.00%
	Low	0	0.00%
	High	0	0.00%
Blood sugar (60 to 140 mg/dl)	Normal	11	36.60%
	Low	19	63.30%
	High	0	0.00%
Platelet	Normal	28	93.30%

(1.5 - 4.5 lakhs)	Low	0	0.00%
	High	2	6.66%
TSH (0.5 - 5 MIU/L)	Normal	29	96.60%
	Low	1	3.33%
	High	0	0.00%

Table 5: Biochemical parameters reports

Perusal of reports showed that haemoglobin level was normal for 60% patients. Majority of patients showed normal body temperature although some patients were in hypothermia or hyperthermia (although statistically not significant). 40% patients showed higher blood pressure. On the other hand, 23.3% patients presented normal blood pressure. Pulse rate was found normal for all patients. Sugar levels of 63.3% patients were found between 60 – 110 mg/dl. Simultaneously 11 out of 30 (36.6%) patients showed normal blood sugar levels. Most of the patients presented normal platelet and TSH values.

2.3 Clinical examination

Clinical sign/Symptoms	Total number of patients (N=30)	Percentage
Backache	13	43.3%
Pedal oedema	6	20%
Weakness	22	73.3%
Anorexia	2	6.66%
Anemia	13	43.3%
Loss of appetite and taste changes	5	16.6%
Fatigue	21	70%
Headache	21	70%
Nausea/Vomiting	5	16.6%
Diarrhea	4	13.3%
Constipation	2	6.66%

Table 6: Clinical sign/symptoms examination

Perusal of clinical signs was done for many symptoms as shown in methodology. Majority of patients showed symptoms of backache (43.3%), weakness (73.3%), anaemia (43.3%), fatigue (70%) and headache (70%). These can be attributed to increased demand and low intake of nutrients.

2.4 Nutrient intake

Nutrient intake as per RDAs		Total number of patients (N=30)	Percentage
Energy	100.00%	0	0%
	80 - 99%	11	36.6%
	70 - 89%	7	23.3%
	60 - 79%	8	26.6%
	<60%	5	16.6%
Protein	100.00%	0	0%
	80-99%	17	56.6%
	69-79%	10	33.3
	<60%	2	6.66%
Fat	100.00%	0	0%
	80-99%	5	16.6%
	69-79%	13	43.3%
	<60%	9	30%
Carbohydrates	100.00%	0	0%
	80-99%	5	16.6%
	69-79%	11	36.6%
	100.00%	0	0%
Iron	80-99%	3	30%
	69-79%	6	20%
	<60%	21	70%
Vitamin C	100.00%	0	0%
	80-99%	0	0%
	69-79%	2	6.66%
	<60%	28	93.3%
Sodium	100.00%	5	16.6%
	80-99%	0	0%
	69-79%	0	0%
	<60%	25	83.3%
Fibre	100.00%	0	0%
	80-99%	0	0%
	69-79%	0	0%
	<60%	30	100%

Table 7: Nutrient intake of obstetric patients

There are different dietary habits of patients. No patient exhibited 100% intake of nutrients except sodium content for which 16.6% patients reflected 100% intake. Energy consumption was found in the range of 80 – 99% in 36.6% patients. Protein intake between 80 – 99% was seen in 56.6% patients. Majority of patients showed fat intake between 59 – 69%. Eleven out of 30 patients showed carbohydrate intake between 69 – 79%. Majority of patients showed iron intake of <60%. This is the main reason for anemia. Similarly 93.3% patients showed vitamin C intake of <60%. Sodium intake of 83.3% patients was seen below 60% of the Recommended Dietary Allowance (RDAs). It was because these were counseled by the Clinical dietitian to lessen salt intake because of pedal edema.

3. Nutritional diagnosis

Parameter	Total number of patients (N=30)	Percentage
Well Nourished Normal	24	80%
Severely Malnourished	2	6.66%
Mild/Moderate Malnourished	4	13.3%

Table 8: Nutritional diagnosis

A timely and accurate nutritional diagnosis helps in identifying and taking proper preventive actions for a specific nutritional problem. The present research work showed that 80% of patients were in the range of well nourished while 13.3% patients were found in the range of mild or moderate malnourished. Two out of 30 patients were found malnourished.

Conclusion

Many experimental studies show potential role of diet in resolving many gynaecological problems. Present study revealed that 80% patients admitted for child delivery were nutritionally well nourished while 6.66% patients were found malnourished. Mean height of patients was found 152 cm and mean weight was found as 63 kg. Gestational weight gain was seen as normal but 30% patients showed low haemoglobin levels that can be linked to lower dietary intake of iron and vitamin C.

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