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Knowledge, attitude and practices regarding nutrition among pregnant women in district of Dewas MP: A cross-sectional study

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Abstract
In the present investigation a descriptive cross-sectional study was conducted from July 22 to February 23 at Woman and Child Development Centers (under the scheme of ICDS) in Dewas (District) department Government of Madhya Pradesh, India. 75 pregnant women and over a period of 6 months were selected randomly. The Semi structured questionnaire related to nutrition knowledge, attitude, and practices was specified in their own language (Hindi). The 54.66% subjects were aware about essential of additional amount of food during the pregnancy. The 56% agreed having extra food during the pregnancy is good for health of mother as well as for fetus. The analysis was conducted using SPSS, and the results show that the chi square (13.927) association with $p<0.003$ has become significant. The 50.66% actually practiced adding additional food during the pregnancy. The study demonstrates that the studied population has adequate knowledge and attitudes on diet and nutrition during pregnancy, but there is still a deficiency in nutrition practices. Thus, there is a considerable gap in the practical application of knowledge and attitude.

Keywords: Nutritional education, pregnant women, knowledge, attitude, and practices etc.

Introduction
Pregnancy is one of the most important life events for any woman. In addition to causing physiological and emotional changes, it also puts extra stress on the body [1]. Studies show that pregnant women in India usually consume diets low in calories, protein, and other critical nutrients [2]. According to NFHS-5 data [3] in Madhya Pradesh, 20.8% women aged 15-49 years are malnourished and 54.7% anaemic. Findings suggest that an insufficient or excessive quantity of nutrients may cause malformations or medical complications in foetus [4]. The World Health Organization reports that many women do not consume enough micronutrients in their diets both before and during pregnancy. Additionally, they are ignorant of the extent to which the outcomes of their pregnancy and baby are influenced by their nutritional health [5]. To ensure a healthy pregnancy, mothers must have sufficient understanding about nutrition and maintain good eating habits both before and throughout pregnancy [6]. Maternal nutrition and routine choices are key effects on mother and child health [7]. The accessibility and supply of nutrients to the growing baby depends on maternal nutritional status [8, 9]. In order to help pregnant women prepare healthy, secure, and well-balanced meals, it is essential to understand the factors impacting their eating habits [10]. Nutritional knowledge and attitude might be helpful goals for the carefully thought out planning of nutrition interventions for vulnerable populations, including expecting mothers and nursing women, since they play a big impact in dietary choices [11, 12]. The framework that is most frequently used to explain how individual information and beliefs impact changes in health behaviour is known as "Knowledge, Attitude, and Practices" [13]. Research has shown that one of the components of adopting a healthier nutritional practice is having attitudes and knowledge about nutrition and health, which are indications of dietary habit adjustment. Pregnant women are therefore expected to possess the skills and mindset needed to maintain their health and nutrition at their best throughout their pregnancy [14, 15]. Maternal nutrition during pregnancy is pivotal in reducing maternal mortality and infant mortality. Finding data on the attitudes and understanding of pregnant women about nutrition and how it relates to their eating habits is infrequent. Unhealthy eating habits have been seen in the pregnant patients getting prenatal care in the study region. In this study, pregnant women receiving nutritional support at Woman and Child Development Centers (under the scheme of ICDS) are assessed for their knowledge, attitudes, and practices with special attention on socio-demographic factors and their relationship to nutrition.

Methods

A descriptive cross-sectional study was conducted from July 22 to February 23 at Woman and Child Development Centers (under the scheme of ICDS) in Dewas (District) department Government of Madhya Pradesh, India. 75 pregnant women and over a period of 6 months were selected randomly. The Semi structured questionnaire related to nutrition knowledge, attitude, and practices was specified in their own language (Hindi).

Sampling Method and Technique

The non-probability sampling method was used for all targets. We used this sampling technique with the help of Anganwadi Supervisor and Anganwadi Sahayika.

Sample size

For the present study, the sample size was calculated according to Cochran equation [16] with power 75% and confidence level of 90%, and absolute error as [5].

$$N = \frac{4(p \times q)}{E_2}$$

$$N = \frac{4(83 \times 17)}{8.7 \times 8.7} = \frac{5644}{75.69} = 74.56$$

Thus, for the present study the minimum sample worked out was 75.

Study conduct: The present research work focused on demographics profile, nutrition knowledge, attitude and practices. The questionnaire on nutrition knowledge had 08 questions about the need for extra food, diverse food groups, sources of nutrients, supplements of nutrients, and avoidable substances during pregnancy. The attitude section had 09 questions about likes and dislikes during pregnancy, and the practices section had 11 questions about actual dietary practices during pregnancy.

Inclusion Criteria

- Pregnant women between the age of 20 and 40 years.
- Pregnant women who are willing to participate is fixed for second stage.

Exclusion Criteria

- Pregnant women who are under 20 years and above 40 years
- Pregnant women who are immunocompromised. Suffer from degenerative diseases. Suffering from terminal illnesses like HIV, cancer or those who are critically were excluded from the study.

Data analysis

SPSS was used for the analysis. It computed descriptive statistics. The relationship was examined using chi square, with $p<0.05$ being regarded as significant.

Results

A total number of 75 pregnant women's attending Woman and Child Development center's (under the scheme of ICDS) were included in the study. Majority were between 25-31 years age group with the mean age of 27.81±2.1 years. In the demographic observation, occupational study of women showed that 33% had homemaker while 18.7% were in service and 11.25% working in government sectors. The educational status wise observation showed that 28% had up to secondary level of education while 40.5% were graduates or post graduates.

Table 1: Socio-demographic characteristics of study respondents (n=75)

Variables	Category	F	%
Occupation	Homemaker	25	33.33
	Service	25	18.7
	Government sector	15	11.25
	Business	10	7.5
Age	21-24	20	15
	25-31	42	56
	32-37	13	9.75
Educational status	Illiterate	12	16
	Primary	12	16
	Secondary	14	18.66
	Higher secondary	17	22.66
	Graduation	20	26.66

Table 2: Pregnant woman' knowledge regarding nutrition during pregnancy

Knowledge	Yes, frequency (%)	No, frequency (%)
Is the nutrition of women different from others during pregnancy?	41 (54.66)	34 (45.33)
Do you know about iron rich food?	31 (41.33)	44 (61.33)
Are you aware of energy requirements during pregnancy?	22 (29.33)	53 (70.66)
Are you aware of food sources of carbohydrates?	39 (52)	36 (48)
Do you have information about food sources of protein?	39 (52)	36 (48)
Are you aware of the benefits of folate during pregnancy?	21(28)	54 (72)
Are you aware of food sources of Vitamin A?	39 (52)	36 (48)
Do you know about calcium rich food?	29 (38.66)	46 (61.66)

Table 3: Pregnant woman' attitude regarding nutrition during pregnancy

Attitude	Yes, frequency (%)	No, frequency (%)
How good do you think it is to eat more food during pregnancy?	42 (56)	33 (44)
How good do you think it is eating more protein or beans during pregnancy?	40 (53.33)	35 (46.66)
How good do you think it is to have more milk and its products during pregnancy?	36 (48)	39 (52)
Is it good to eat extra food during pregnancy?	33 (44)	42 (56) 33
Is it good to have different types of food during pregnancy?	28 (37.33)	47 (62.66)
Is it good to have green leafy vegetables daily in meal?	23 (30.66)	52 (69.33)
Is it good to have iron folic acid and calcium supplementation?	34 (45.33)	41 (54.66)
Is it good to drink 3 to 5 liter of water daily during pregnancy?	23 (30.66)	52 (69.33)
How do you like the taste of iron rich food?	34 (45.33)	41 (54.66)

Table 4: Pregnant woman' practices regarding nutrition during pregnancy

Practices	Yes, frequency (%)	No, frequency (%)
Do you consume any additional meal (breakfast, lunch, dinner)	31 (41.33)	44 (58.66)
Do you consume two or more fruits daily	44 (58.66)	31 (41.33)
Do you eat breakfast every day?	46 (61.33)	29 (38.66)
Do you have lunch every day?	50 (66.66)	25 (33.33)
Do you have a habit of eating snacks between meals at different times?	22 (29.33)	53 (70.66)
Do you use iron supplements daily?	46 (61.33)	29 (38.66)
Do you add citrus fruits to green leafy vegetables?	16 (21.33)	59 (78.66)
Do you consume fresh vegetables daily?	23 (30.66)	52 (69.33)
Do you consume carbohydrate-rich food daily?	43 (57.33)	32 (42.66)
Do you consume protein rich food daily	38 (50.66)	37 (49.33)
Do you consume foods rich in vitamins A, D and K?	13 (17.33)	62 (82.66)

Table 5: Relationship between education level and awareness of the need for extra nutrition during the pregnancy

Education status	Yes, 41	No, 34	Chi square	P= value
Illiterate	0	12	13.927	0.003
Primary	3	9		
Secondary	7	7		
Higher secondary	12	5		
Graduation	19	1		

The distribution of knowledge, attitudes, and practices among pregnant women is investigated in this study. Out of 75 respondents, 41 (54.66%) respondents had well known about additional nutrition, from others during the pregnancy and also for iron and folate supplementation. The 22 (29.33%) respondents had aware of energy requirements during pregnancy and 53 (70.66%) respondents were not aware about it. The 39 (52%) respondents had good knowledge about sources of carbohydrates and 36 (48%) did not knowledge about sources of carbohydrates (Table 2). Positive attitude for having additional diet during pregnancy was seen amongst 31 (41.33) and 44 (58.66%) respondents practiced having additional meal in their current pregnancy (Table-3 and 4). When the relationship between the study subjects' educational status and their knowledge of consuming extra food while pregnant was evaluated, it emerged that those with higher educational levels had better knowledge than those with only a primary or illiterate education. (p=0.003).

Discussion

The objective of the current study was to evaluate the degree of maternal attitude, awareness, and knowledge regarding nutrition during pregnancy. We conducted interviews with pregnant women, collected their answers, and analyzed them. Study reveals that more than the 41 (54.66%) had knowledge about essential of additional amount of food during pregnancy and 34 (45.33) stressed on routine diet in line with the verdicts of study done by Sanyogita *et al*. where 81.1% of respondents stressed on accumulation additional diet in pregnancy [1]. 31 (41.33%) respondents had knowledge about iron rich food and 44 (61.33%) respondents were not conscious about it. This finding shows feeble knowledge about iron rich food amongst the targeted population. The 39 (52%) respondents had respectable knowledge about diverse sources of macronutrients like carbohydrates, vitamins, proteins and 36 (48%) did not aware about it. Study done by Zelalem *et al*. revealed similar finding where (43.8%) believe to eat variety of food during pregnancy but knowledge level was less comparative to our study (54.66%) regarding necessity to eat more during pregnancy than their non-pregnant state[4]. In this study, results on the attitude of the respondents regarding pregnancy nutrition reveals that, out of 75 respondents 42 (56%) agreed for having additional food during the pregnancy 33 (44%) were neutral regarding accumulation of additional food during pregnancy, none of the respondents disagreed about having additional food during pregnancy. In contrast to the findings of Data *et al*., which showed that 75% of the studied population had a positive attitude towards the importance of maternal and infant nutrition and 25% had a negative attitude, this illustrates a low positive attitude regarding the necessity and importance of additional food during pregnancy [17]. The dietary habits of pregnant women revealed that, 75 participants, 38 (50.66%) added at least one extra meal from a non-pregnant diet, whereas 37 (49.33%) individuals continued to consume the same foods they had previously. According to the previous study, 53% of individuals had healthy eating habits during pregnancy, while 47% had poor

eating habits. These results are comparable [18].

The results of this study showed a strong correlation between the subjects' educational attainment and their awareness of the need for additional nutrition during pregnancy (p=0.003). This suggests that for women to understand nutrition during pregnancy, education is crucial. Similar conclusions were drawn from a study by Sanyogita *et al*., which shows that, of 291 mothers, 50 (100%) had intermediate education or above, 72 (94.7%) had a high education, and 48 (85.7%) had a middle education. In contrast, 51 (81%) had only a primary education, and 70 (61.4%) were illiterate [1].

Conclusion

Woman and Child Development Center's (under the scheme of ICDS), which offer nutrition education, are a good place for expectant mothers to expand their knowledge of nutrition. Pregnant women's understanding of nutrition should be improved by implementing specialized interventions programs that expand on the existing focus of iron supplementation during pregnancy and target audiences with relevant experiential nutrition education. According to the study's findings, the government should fortify food, raise public awareness, and put supplementing plans into place in order to improve its nutritional content. Programs for women to improve their nutritional knowledge, behaviours, and practices should be specifically designed, implemented, and assessed. This will help them adopt healthier eating habits and provide better outcomes for their unborn baby.

The study suggests that the studied population has adequate knowledge and attitudes on diet and nutrition during pregnancy, but there is still a deficiency in nutrition practices. Thus, there is a considerable gap in the practical application of knowledge and attitude. It is necessary to raise awareness of the value of nutrition during pregnancy.

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