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Original Research Article

## The assessment in the awareness regarding nutrition in pregnancy in population attending Dhiraj hospital and effect of taboos, customs and food availability on such population

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### ABSTRACT

**Background:** Food taboos have great effect on pregnant women through prohibited essential food and/or drinks. It is transferred from generation to generation and has negative effect on pregnant mothers' health. The objective was to assess magnitude of food taboo and associated factors among pregnant women attending antenatal care at Dhiraj hospital, Waghodiya, Vadodara.

**Methods:** Institutional based cross-sectional study was conducted. 180 pregnant women were selected for the study. Multiple logistic regression analysis was conducted to identify independent predictors of food taboo.

**Results:** Twenty-seven percent of pregnant mother encountered food taboos. Avoided food items by pregnant mothers were linseed, coffee, tea, cabbage, meat, wheat bread, banana, groundnut, salty diet, sugarcane, pumpkin, and coca drinks. Reasons mentioned for avoidance of this food items were plastered on the fetal head, making fatty baby which is difficult for delivery, fear of abortion, and fetal abnormality. Age of the mother AOR=2.97 (1.71-5.16), income AOR=0.28 (0.11-0.72), and previous antenatal care AOR=2.33 (1.89-5.47) were significantly associated with food taboo.

**Conclusions:** Our study revealed that considerable proportion of food taboo exists during pregnancy in the study area. This can be improved by strengthening the nutrition counselling components of antenatal care follow-up.

**Keywords:** Dhiraj hospital, Nutritional practices, Pregnant women, Taboos

### INTRODUCTION

Food taboos among rural women are identified as one of the factors contributing to maternal under nutrition in pregnancy.<sup>1</sup> Pregnant women and lactating women in several parts of the world are forced to abstain from nutritious and beneficial foods.<sup>2-4</sup> In various studies, it had been seen that pregnant women in different parts of the world are forced to take nutrients as a part of their own food habits.<sup>5,6</sup> Food taboo may be deliberate avoid of a food item for reasons other than simple dislike of food.<sup>7</sup> In some area, food taboos are often meant to guard the human individual and the observation, for instance, that certain

allergies and depression are related to each other could have led to declaring food items taboo that were identified as causal agents for the allergies.<sup>7</sup> It's believed that any food taboo, acknowledged by a specific group of people as part of its ways, aids within the cohesion of this group, helps that specific group maintain its identity in the face of others, and, therefore, creates a way of belonging.<sup>7</sup> The avoidance of certain food items and incorrect knowledge regarding their benefits can deprive women from adequate nutrition, especially during the critical periods of pregnancy when it is of great benefit to the mother and her fetus.<sup>8</sup> Major reasons given by the women as to why they avoid some foods include fear of difficult delivery as a

result of big babies following the consumption of foods presumed to increase the size of the fetus.<sup>9,10</sup> Other reasons include fear of spontaneous abortions and discoloration of the fetal body.<sup>9</sup> Nutrition during pregnancy has gained interest over the years due to the understanding that there is an increased physiologic, metabolic and nutritional demand associated with pregnancy. This has been regarded as an important determinant for fetal growth and well being.<sup>14</sup> Infant size, such as birth weight and length, was reported to affect not only infant mortality but also childhood morbidity and mortality.<sup>11,12</sup> Women in developing countries suffer from nutritional deficiencies, but sociocultural factors including superstition and taboos that may be associated with malnutrition are not well studied. This study was therefore undertaken to explore some of the taboos and nutritional practices in pregnancy women attending antenatal care (ANC) at a Dhiraj General Hospital Waghodiya, Vadodra.

So many women in sub-Saharan Africa remain particularly exposed to what has become known as “hidden hunger.” Hidden hunger is the lack of, or inadequate intake of micronutrients or macronutrients, resulting in different types of malnutrition, such as anaemia and deficiencies of iron, vitamin A and zinc and calcium, among others. This can occur even in the presence of adequate energy and protein intake.

Food taboo is abstaining people from food and/or beverage consuming thanks to religious and cultural reasons.<sup>13</sup> It often permanent or temporal. Permanent food taboos are avoiding food and/or drinks throughout their life, while some foods are avoided surely periods of time. These restrictions often apply to women and are associated with the reproduction cycle (during pregnancy, birth, and lactation periods).<sup>14</sup> Pregnant women have faced dietary deficiency thanks to food taboo. Some pregnant women, who sleep in rural area, are obliged to possess food taboo that restrain calorie and specific nutrients.<sup>15</sup> Although within the real scenario pregnancy requires more calorie, some food items are considered to be good or bad by the community during pregnancy.<sup>16</sup> Food taboos among pregnant women are varying from culture to culture and community to community especially in rural settings. Pregnant women who were practicing food taboos had significance on lower weight and unhealthier babies.<sup>17,18</sup> Food taboos have influence on pregnancy although they need about 300 extra calories per day, especially during the later pregnancy period. When a baby grows quickly, additional calories should come from nutritious foods, in order that they can contribute to baby’s growth and development.<sup>19</sup> The major problem of food taboos is preventing pregnant women from accessing a well-balanced diet, leading to high prevalence of low birth weight and harm to mother and baby.

Any country within the world has food taboo due to different factors like culture, norm, and religion. The food taboo is additionally differing from place to place and time to time. Each religion has its own food taboo.<sup>20</sup> Food

taboos during pregnancy are influenced by various factors like dietary counselling, whether attending antenatal care (ANC) clinic or not, younger age, less educational status, and pregnant women. Culture and belief also influence maternal eating pattern during pregnancy.<sup>21</sup> Food taboos on pregnant women usually cause having low nutritional status and put them at high risk of maternal death.

Maintaining well nutritional status of pregnant women and keeping their health are important by assessing the gap about food taboo. These will give scientific evidence for important person and programmers to design possible strategy, to deal with the problem, furthermore, for the health care workers to intervene supported the finding.

Most communities, rural or urban, have taboos regarding foods to avoid during pregnancy, and most have local explanations for why certain foods should be avoided. Such taboos may have health benefits, but they can also have large nutritional and health costs to mothers and fetus. As such, understanding local pregnancy food taboos is a crucial public health goal, especially in contexts where food resources are limited. Despite this, information regarding food taboos is restricted in Ethiopia. Therefore, this study assessed food taboos, related misconceptions, and associated factors among pregnant women in Vadodara.

## METHODS

Institutional based cross-sectional study was conducted among women attending ANC in department of obstetrics and gynecology, SBKS MC, Vadodara, Gujarat, India. The study was conducted from 1 January to 1 July 2022.

The sample size determination was used with the assumption of confidence level=95%, critical value  $Z=1.96$  (from significance level  $\alpha=5\%$ ), and degree of precision=0.05, then the sample size was calculated using the formula for single population proportion. Since the target population in the study area was less than 10,000 (2000) we use the formula,

$$n = n_0 / 1 + n_0 / N,$$

where,

$n_0$  is the number of pregnant women.

$n = 200 / (1 + 200 / 2000) = 181$ . So, total sample size was 180.

### ***Inclusion criteria***

ANC patients visiting Dhiraj hospital on IPD basis were included in the study.

### ***Exclusion criteria***

Patients having known medical disorder with diet restriction were excluded.

## Procedure

Interviewer-administered, validated, structured questionnaire was used to interview 180 respondents, and this showed various sociodemographic information, nutrient intake, and taboos of the community and a 24-hour food recall. The 24-hour food recall was conducted by requesting the respondent to mention specifically the various types of food she ate the past 24 hour preceding the interview (these included the previous day meals). The questionnaires were administered in hospital. Questions related to nutritional practices such as should a pregnant woman take some eggs, meats, fish, vegetables/fruits, and groundnuts. The participants were expected to answer either yes or no. In this survey, the opinion of the respondent was sampled using the questionnaire. Questions asked include did you eat adequate meal (the respondent's subjective assessment of her food intake as being enough in quantity and quality). Did you eat three square meals (as adjudged as adequate meal including breakfast, lunch and dinner?), did you eat adequate oil?, did you eat substances that are largely non-nutritive, such as paper, clay, metal, chalk, soil, glass, or sand?, did you eat adequate meat/fish?, and did you take adequate fruits/vegetables?. On food taboos, the respondents were asked what their views are about nutrition and pregnancy: nutrition does not matter, pregnant women should eat less to avoid big babies, pregnant women should eat more to have healthy babies, and pregnant women should avoid animal-based food. The respondent also answered either yes or no as appropriate. The participants were selected by

simple random sampling techniques. To participate in the study, a respondent should be 18 years and above, give an informed consent, and should have booked for ANC in the facility. All socioeconomic classes were included in the study. Their sociodemographic variables and responses on nutritional practices were collated. Numbers, mean, standard deviation (SD), and simple percentages were used to describe categorical variables.

Association between sociodemographic factors and nutritional practices and taboos was determined using Chi-square test and  $p < 0.05$  was considered statistically significant. Data were analyzed using SPSS statistical software version 17.0.

## RESULTS

### *Sociodemographic characteristics*

Among 205 respondents, data were collected from 180 pregnant women; this made the response rate 94.7%. About 87% of the respondents were orthodox and 13% were from non-orthodox. Around 46% of the pregnant women were illiterate and 66% of the pregnant women lived in rural areas (Table 1).

### *Food taboos during pregnancy*

Twenty-nine percent of respondent avoid three or more food/drink items during pregnancy. Twelve food and/or drink items were prohibited by the study participants.

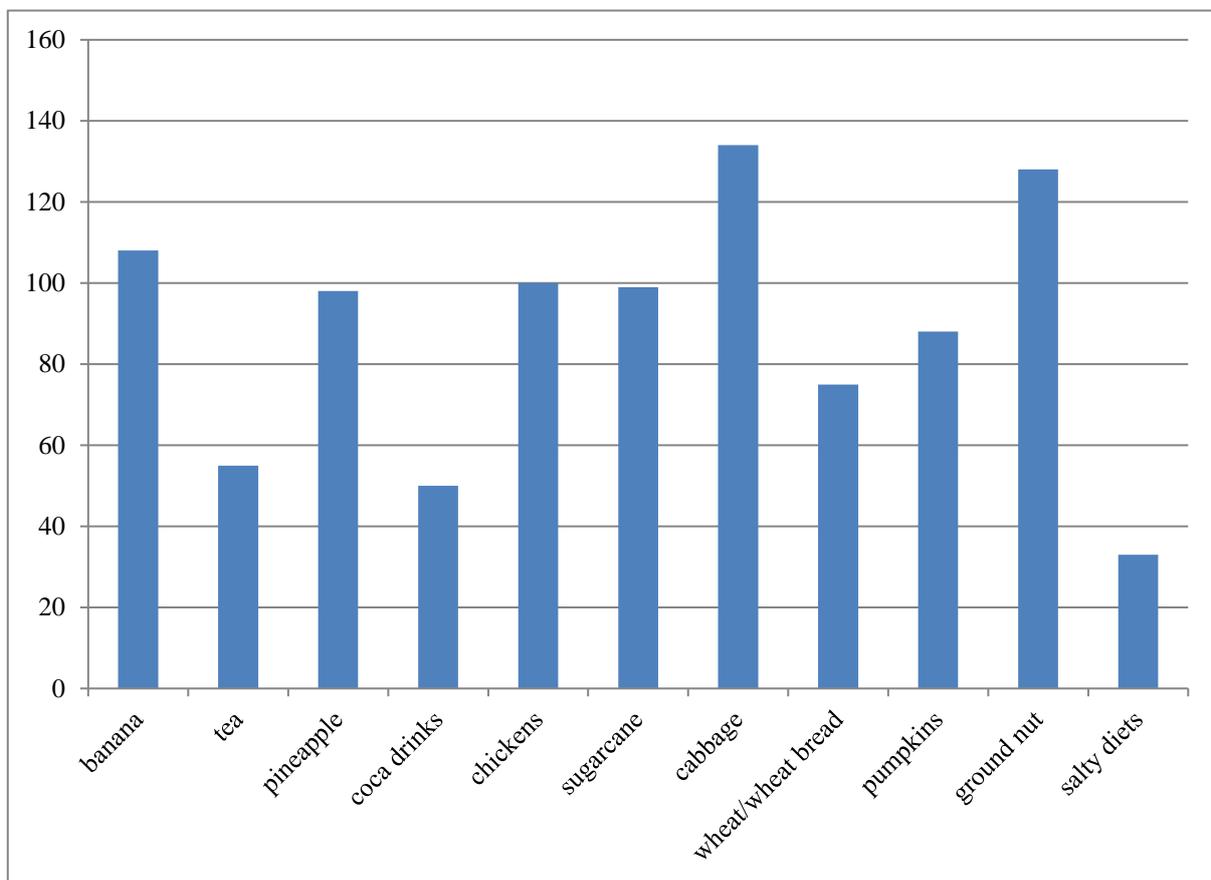
**Table 1: Sociodemographic characteristics of ANC follow-up women in Dhiraj Hospital, Waghodiya (n=180).**

Variables	Frequency	Percentage	
Age group (years)	<20	30	16
	20-24	79	43
	25-29	55	32
	>30	16	9
Religion	Orthodox	156	87
	Non-orthodox	24	13
Education status	Cannot read and write	83	46
	Can read and write	40	23
	Primary school	10	5
	Secondary school	20	11
	College and above	27	15
Occupation of mother	Farmer	100	55
	Government employee	20	12
	Merchant	10	5
	Housewife	50	28
Gravida status	Primi	155	86
	Multi	25	14
Booked/unbooked	Booked	140	78
	Unbooked	40	22
Residence	Urban	80	44
	Rural	100	66

**Table 2: Determinants of food taboo in public health institution in Vadodara district. (n=180).**

Variables	Having food taboo		COR (95%CI)	AOR (95%CI)	P value	
	Yes	No				
<b>Age of mother (years)</b>	15-19	8	22	1.00	1.00	
	20-24	23	56	0.68	2.97	0.001
	25-29	18	37	0.67	3.58	0.001
	>30	1	14	3.18	12.70	0.003
<b>Income of mother</b>	5000	14	69	1.00	1.00	
	5000-10000	13	26	0.337	0.291	0.002
	10000-15000	9	18	0.308	0.281	0.008
	>15000	14	17	0.242	0.330	0.036
<b>Previous ANC attendant</b>	Yes	37	18	1.00	1.00	
	No	96	33	1.22	2.34	0.007

Note: COR: crude odds ratio; AOR: adjusted odds ratio; CI: confidence interval.



**Figure 1: Food taboo in ANC attendants in each food items/drinks in Vadodara district.**

**Fruits and vegetables**

Certain fruit and vegetables were taboo during pregnancy such as banana 108, cabbage 134, chicken 100, and sugarcane 99, pineapple 98. Pregnant women believed that the reason for the taboo is that when they consumed banana, something is attached to the head of the fetus, chicken burns the fetus, cabbage disturbs the fetus, and sugarcane increases the seminal fluids (Figure 1).

**Cereals and salty diet**

The result of this study indicated that cereals were taboos like pumpkin 88, wheat 75, groundnut 128, and salty diets 33. The study participants avoided pumpkin and ground nut because they assumed that these foods increase the weight of the fetus, making it difficult to deliver.

## Drinks

Drinks like coffee, tea, coca, were restricted due to burning the fetus and causing abnormality and coca drink causes abortion.

## DISCUSSION

The finding of this study revealed that 27% of study participants had food taboo which is a smaller amount than the proportion of food taboo in different studies done. The possible difference could also be because of study time, study area, and increase within the knowledge of the mother in the time of the study. During this study, some fruits were avoided although they were important in the period of pregnancy. Age of the mother was increased, adoption of the food taboo was increased. This study was almost similar to the study in Shashmene.<sup>16</sup> Pregnant women whose age were 20-24 years were 6.8 times more likely to develop food taboos compared with age between 15 and 19 years. The possible explanation could also be that younger women more likely accept modern education and older women have indigenous knowledge. Previous ANC attendance of study participant was significantly related to food taboo. Pregnant women who haven't had ANC attendance in the health institution were 2.33 times more likely to develop food taboo as compared with pregnant women who have had ANC attendance. This might be due to the knowledge gained from formal education and experienced health education.<sup>16</sup> During this study, income was significantly related to food taboo. Pregnant women who earned 5000-10000rs were 56% less likely to possess food taboo compared to pregnant women who have ANC attendance. This may be due to the knowledge gained from formal education and experienced health education. In this study, income was significantly associated with food taboo. Pregnant women who earned 5000-10000 rupees were 56% less likely to have food taboo compared to pregnant women who have <5000 rupees monthly income, As income increased, the avoidance of food taboos decreased.<sup>16</sup>

The limitation of this study was that use of questionnaires meant that individual opinion was assessed, and these may not be objective.

## CONCLUSION

Regular antenatal care plays a serious role. But there's a scope for proactive diet counselling of the pregnant lady and overall diet awareness in general population along with improvement in literacy and socioeconomic status of women in the society. Requires changes or modification. There is need for improving paramedical staff for correct diet counselling. The dietary habits, culture practices and taboos are deep rooted and requires modification. We need to put a halt to these practices and create awareness among pregnant women. There were low proportion of food taboos in the study area and were obligated to avoid specific food items due to cultural and traditional view.

Women, who were of adulthood, had low income, and had not had previous ANC attendance, were more practicing food taboos. The food and drink items, which were avoided during pregnancy, were linseed, cabbage, banana, sugarcane, pumpkin/duba, nug, tea, coffee, porridge, coca drink, groundnut, pimento, and salty diets. Reasons which avoid food were plastered on the fetal head, fatty baby, fear of abortion, and fetal abnormality. Age of the mother, income, and former ANC attendance had significant associate on with food taboos.

## Recommendations

Midwives had better work more for creating awareness about food taboos. Women, who had food taboos, assess the explanations and provide health education about the use of appropriate nutrition. Governmental, NGO and various public associations had been better actively involved in eliminating harmful beliefs. Health education program had better taken cognizance of the favoured beliefs regarding food taboos during pregnancy and used innovative means to minimize their negative and maximize their positive nutritional effects. The health professionals, who better created awareness for pregnant women who have ANC follow-up to attenuate food taboos.

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