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Social taboos and superstitions in food consumption during pre and post natal period of tribal women in Rayagada district

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Abstract
Pregnancy and lactation require supplementary nutrition for a mother. But the situation becomes more complicated when a pregnant or a lactating woman follows or forced to undergo certain dietary restrictions traditionally. In order to identify food restrictions and social taboos among the tribal community during pregnancy and early part of lactation, the study was to find out the association between different parameters(Age, Education and BMI**)** with Food taboos among the subjects residing in the rural area of 4 villages (Kultiguda, Pedaguda, M. Petesu and Sana chandili) of Rayagada district. Cluster sampling method was used to select the villages and Purposive sampling method was used to select the respondents (pregnant and lactating women). Out of 80 samples, 20 pregnant and 60 lactating women were undertaken from the above mentioned 4 villages of Rayagada district. Information about the socio-demographic variables of the respondents, food taboos and superstitions during pregnancy and lactating period was obtained by personal interview through the structured questionnaire from the respondents and the old ladies of the family. Same food items were found restricted in both pregnancy and lactation i.e. Colocasia, prawn and dry fish were avoided by same percentage (81.25%) women, brinjal was avoided by 76.25% women, leafy vegetables were avoided by 67.5% women, mutton was avoided by 56.25% women, ripe papaya and ripe jackfruit were avoided by 55% women and egg was avoided by 43.75% women.

Keywords: food taboos, pre and post-natal period, tribal women, BMI, nutritional status

Introduction
Maternal Nutrition is very important during pregnancy and lactation. Lactation is a stage where the health and nutritional status of the infant depends on the nutritional status of the mother. Successful pregnancy and lactation requires proper adjustments in maternal body composition, metabolism and various physiological functions. A balanced diet that meets maternal needs is required for the well being of both the mother and the new born baby. Adequate nutrition during pregnancy and lactation not only helps in maintaining the health of the mother but also helps in maintaining the health of the baby and helps in desirable growth and development of the fetus during pregnancy and the new born during lactation. The word "food taboo" can be defined as restriction or prohibition of eating a food for a particular reason. It may differ from culture to culture, society to society, state to state, family to family and individual to individual.

Rayagada is a tribal dominant district having 57.52% population of tribes only. According to NFHS-4(2015-16) in Rayagada, total 52.5% pregnant women between the age of 15 to 49 years were anemic, 43.5% children (<5 years of age) were stunted, 23.1% children (<5 years of age) were wasted, 6% children (, 5 years of age) were severely wasted and 42.4% children (< 5 years) were underweight. From this data it was found that the maternal and children nutritional status was vulnerable. The child's nutritional status depends on so many factors such as maternal nutritional status, maternal literacy status, economical status and other environmental factors as food taboos during pregnancy and lactation has negative impact on the maternal nutritional status. So this study was undertaken in tribal community in Rayagada district to find out their food taboos and food consumption pattern which affects their nutritional status to a greater extent.

Methodology
A cross sectional study was undertaken in 4 villages (Kultiguda, Pedaguda, M. Petesu and Sana chandili) of Rayagada district. Out of 4 villages, 3 villages (Kultiguda, Pedaguda and

M. Petesu come under Gadiseskhal panchayat, Kolnara block and 1 village (Sana chandili) comes under Chandili panchayat, Rayagada block of Rayagada district. A pre tested questionnaire was used to collect the desired information regarding food taboos and superstitions during pregnancy and lactating period was obtained by personal interviewing with the subject and the old ladies to triangulate and to find out the causes of food restrictions by their elders of the family.

Sampling procedure

Cluster sampling technique was used to select the villages and Purposive sampling method was used to select the respondents (pregnant and lactating women) with specific objective to collect information about the food taboos and superstitions during pregnancy and lactating period. A total of 80, 20 pregnant and 60 lactating women were undertaken from the above mentioned 4 villages of Rayagada district as sample size. The collected data were coded, transferred into the excel sheets and analyzed to get the results. Desired tables were generated manually. The various methods were used to analyze the data are as follows.

Statistical analysis

Percentage

a. Simple percentage was computed to assess the contribution of the desired observations.
b. Percentage (%) = Number of desired observations/ total number of observations *100

Average Mean

c. The mean of a sample or a population is computed by adding all of the observations and dividing the number of observations. This was used to find out the average consumption of each nutrient by the respondents per day and to find out the average nutritional status (Height, Weight and BMI) of the respondents.
d. **$X= \Sigma x/n$**
   Σx is the sum of all the sample observations and n is the number of sample observations.

Chi-squared test

It is also referred to as χ^2 test, is any statistical hypothesis test in which the sampling distribution of the test statistic is chi-square distribution when null hypothesis is true. Chi-square test is often constructed from a sum of squared errors or through the sample variance. A Chi-squared test can be used to reject the hypothesis that the data are independent. This test was used to find out the association between different parameters (Age, Literacy and BMI) with food taboos and literacy and type of family with BMI. Inference was drawn on the basis of acceptance or rejection of null hypothesis.

$$\chi^2 = \Sigma (O-E)^2/E$$

O= The frequencies observed
E= The frequencies expected
Σ= The "sum of"

Degree of freedom was calculated as

$$F=(C-I)*(R-I)$$

Where C= Number of columns
R=Number of rows

Results and discussion

Table 1: Food taboos during Pregnancy N=20

Type of foods	Name of foods	Trimester($1^{st}/2^{nd}/3^{rd}$)	Superstitions	Frequency	Rank
Energy dense foods	Groundnut	1^{st}, 2^{nd}, 3rd	Head protruding	7(35.0)	4
	Maize	2nd, 3rd	Abdominal pain	7(35.0)	4
Body building foods	Dry fish	1st, 2nd, 3rd	Skin problem and allergy and Stomach injury of baby	14(70.0)	1
	Fish	1st, 2nd, 3rd	Head Protruding	7(35.0)	4
	Meat	2nd, 3rd	Fetal abnormality	10(50.0)	2
	Prawn	1st, 2nd, 3rd	Skin problem and allergy of baby	14(70.0)	1
	Egg	1st, 2nd, 3rd	Miscarriage	10(50.0)	2
Protective Foods	Ripe papaya	1st, 2nd, 3rd	Abortion	14(70.0)	1
	Ripe Mango	2nd, 3rd	Indigestion	7(35.0)	4
	Ripe Jackfruit	2nd, 3rd	Abdominal pain	9(45.0)	3
	Brinjal	1st, 2nd, 3rd	Skin allergy of baby and Indigestion	10(50.0)	2
	Colocasia	1st, 2nd, 3rd	Skin allergy of baby	14(70.0)	**1**

Figures in the parenthesis indicate percentage value

Table 2: Food taboos during Lactation N=60

Type of foods	Name of foods	Restriction period (0-6 month/ 6-12 month)	Superstitions	Frequency	Rank
Energy Dense Foods	Maize	**0-6**	Cough to baby	40(66.66)	4
	Colocasia	0-12	Itching and skin allergy to baby	51(85.0)	1
Body building foods	Dry fish	0-12	Skin problem and allergy to baby.	51(85.0)	1
	Fish	1st, 2nd, 3rd	Head Protruding	7(35.0)	4
	Meat	2nd, 3rd	Fetal abnormality	10(50.0)	2
	Prawn	1st, 2nd, 3rd	Skin problem and allergy of baby	14(70.0)	1
	Egg	1st, 2nd, 3rd	Miscarriage	10(50.0)	2
Protective Foods	Ripe papaya	1st, 2nd, 3rd	Abortion	14(70.0)	1
	Ripe Mango	2nd, 3rd	Indigestion	7(35.0)	4
	Ripe Jackfruit	2nd, 3rd	Abdominal pain	9(45.0)	3
	Brinjal	1st, 2nd, 3rd	Skin allergy of baby and Indigestion	10(50.0)	2
	Colocasia	1st, 2nd, 3rd	Skin allergy of baby	14(70.0)	1

Figures in the parenthesis indicate percentage value

Table 3: Association between Age, Education and BMI with Food taboos among Pregnant women (N=20)

Variables	Categories	N(Number of respondents)	Yes	No	X2 (p value)
Age	20-25 yrs	9(45.0)	6(66.66)	3(33.33)	0.004*
	26-30 yrs	7(35.0)	5(71.42)	2(28.57)	
	31-35 yrs	4(20.0)	3(75.0)	1(25.0)	
	Total	20(100.0)	14(70.0)	6(30.0)	
$\chi2$=5.99 df=2 *= Significant at p<0.05					
Education	Literate	13(65.0)	8(61.53)	5(38.46)	6.95087E-05*
	Illiterate	7(35.0)	6(85.71)	1(14.28)	
	Total	20(100.0)	14(70.0)	6(30.0)	
BMI	<18.5	6(30.0)	5(83.33)	1(16.66)	0.0007*
	>18.5	14(70.0)	9(64.28)	5(35.71)	
	Total	20(100.0)	14(70.0)	6(30.0)	
($\chi2$=3.84, df=1) *= Significant at p<0.05					

Figures in the parenthesis indicate percentage value

Information about the association between different parameters (Age, Literacy and BMI) with food taboos among pregnant women was presented in Table-3. It was found that p value was (<0.05). So there was significant association between the parameters with food taboos. The respondents who were younger in age, literate were having less food taboos as compared to those who were older in age and illiterate. Those who were having more food taboos had BMI (<18.5) and those who were having less taboos had BMI (>18.5).

Table 4: Association between Age, Education and BMI with Food taboos among Lactating women (N=60)

Variables	Categories	N(Number of respondents)	Yes	No	X2 (p value)
Age	20-25 yrs	20(33.0)	13(65.0)	7(35.0)	2.03586E-11*
	26-30 yrs	25(42.0)	24(96.0)	1(4.0)	
	31-35 yrs	15(25.0)	14(93.33)	1(6.66)	
	Total	60(100.0)	51(85.0)	9(15.0)	
$\chi2$=5.99 df=2 *= Significant at p<0.05					
Education	Literate	24(40.0)	18(75.0)	6(25.0)	1.71391E-09*
	Illiterate	36(60.0)	33(91.66)	3(8.33)	
	Total	60(100.0)	51(85.0)	9(15.0)	
BMI	<18.5	17(28.0)	16(94.11)	1(5.88)	0.0007*
	>18.5	43(72.0)	35(84.39)	8(18.60)	
	Total	60(100.0)	51(85.0)	9(15.0)	
($\chi2$=3.84, df=1) *= Significant at p<0.05					

Figures in the parenthesis indicate percentage value

Table-4 revealed the information about the association between different parameters (Age, Literacy and BMI) with food taboos among lactating women. It was found that p value was (<0.05). So there was significant association between the parameters with food taboos. The respondents who were younger in age, literate were having less food taboos as compared to those who were older in age and illiterate. Those who were having more food taboos had BMI (<18.5) and those who were having less taboos had BMI (>18.5).

Food consumption frequency by respondents

Cereals and millets were consumed by 100% respondents (both pregnant and lactating women) on daily basis. Pulses and legumes were consumed by 70% and 68.33% by pregnant and lactating women respectively on daily basis. 30% and 31.66% respondents (pregnant and lactating women respectively) were consuming pulses 3 to 5 times per week. 5%, 35% and 40% pregnant women were found consuming green leafy vegetables 3 to 5 times/week, fortnightly and occasionally respectively. 100% lactating women were consuming green leafy vegetables occasionally. Roots and tubers and other vegetables were consumed by 100%respondents (both pregnant and lactating women) on daily basis. Fruits, Mutton, milk and milk products and nuts and oilseeds were consumed occasionally by 100%respondents (both pregnant and lactating women). Egg and chicken was consumed by 33.33% lactating women fortnightly. 100% pregnant women and rest 66.66% lactating women were consumed egg and chicken occasionally. Sugar and jaggery were consumed by 50% pregnant women and 33.33% lactating women 3 to 5times/week and the rest 50% pregnant and 66.66% lactating women were consumed sugar and jaggery occasionally. Most of the respondents (88.75%) were non vegetarian and only 11.25% were vegetarian. 62.5% were taking 3 meals per day and 30 respondents (37.5%) were taking 4 meals per day. 30 respondents (37.5%) found skipping meals and 50 respondents (62.5%) told were found not skipping meals.

Conclusion

Same food items were found restricted in both pregnancy and lactation, i.e., Colocasia, prawn and dry fish were avoided by 81.25% women, brinjal was avoided by 76.25% women, leafy vegetables were avoided by 67.5% women, mutton was avoided by 56.25% women, ripe papaya and ripe jackfruit were avoided by 55% women and egg was avoided by 43.75% women. The illiterate women were found having more food taboos as compared to literate women in the community.

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