

# Dietary assessment of tribal lactating mothers in Koraput district of Odisha

■ JHULANA RANI BEHERA AND CHANDRASHREE LENKA

Received: 01.06.2017; Revised: 11.10.2017; Accepted: 25.10.2017

■ **ABSTRACT** : Tribal people are socio-economically disadvantaged compared to other population group with regard to their food habits, dietary pattern and life style. Geographical isolation, lack of formal education, sociocultural taboos coupled with poverty lead them to development of various morbidities. Keeping these facts in mind the present research is designed to study the “Dietary assessment of Tribal lactating mothers in Koraput district of Odisha”. One hundred lactating mothers of Koraput block and Damanjodi block of Koraput district of Odisha were selected by random purposive sampling method for the present study. The data was collected by questionnaire cum interview method. The results of the study revealed that majority of the respondents belonged to 19-25 years of age group having agriculture as primary occupation. All of them belonged to low income group. Most of the respondents had normal delivery. 100% immunization of mothers by TT injection was observed in surveyed population. In majority cases age at first delivery was 20-25 years. Only 8% respondents were not taking supplement from AWC due to poor quality food and long distance of their home. 96 per cent of the respondents were non-vegetarian and were taking three meals per day. Their diet was found to be dominated by rice, roots and tubers and other vegetables. Milk and meat product, sugar, oil and pulses were found to be less in their diet in comparison to RDA. Their diet was found to be less than RDA i.e. Energy (3253.18 kcal), protein (67.12g), fat (36.98 g), calcium (910.69 g) and iron (18.22g) for 0-6 months lactating mothers and Energy (3197.58kcal), protein (51.95g), fat (32.99 g), calcium (910.12 g) and iron (12.95g) for 7-12 lactating mothers. Different food fads and fallacies prevailed in that area were - rice flake and sago for better lactation, dry ginger for control bleeding. Pumpkin, bitter gourd, malayu (poi) etc. were avoided as they cause stomach disorder both in mothers and infants such as acidity and diarrhea. Thus it can be concluded that the community need women education to improve their health status by wise use of available food stuffs and government should provide good quality of supplementary foods to meet the dietary need of lactating mothers.

■ **KEY WORDS:** Tribal, Dietary habits, Nutrient, RDA, Lactation

See end of the paper for authors' affiliations

**CHANDRASHREE LENKA**  
Rama Devi Women's Jr. College,  
BHUBANESWAR (ODISHA) INDIA

■ **HOW TO CITE THIS PAPER** : Behera, Jhulana Rani and Lenka, Chandrashree (2017). Dietary assessment of tribal lactating mothers in Koraput district of Odisha. *Asian J. Home Sci.*, 12 (2) : 477-481, DOI: 10.15740/HAS/AJHS/12.2/477-481.

Lactation is one of the most vulnerable period in a women’s life. The nutritional needs of lactating mother can not be over looked as it is highly essential to fulfill the physiological needs of the mother as well as for healthy growth and development of the infant. Poor diet of mother during lactation period leads to less secretion of breast milk having low nutritive value which has a negative impact on child’s health in future. On the other hand excessive energy is required to produce sufficient milk during lactation which demands increased foodintake by the mother. Studies showed that even of food intake is not increased sufficient milk can be produced by depleting fat stores of the mother which ultimately affects the health of the mother and leads to malnutrition. Thus it is a vicious cycle. A women with poor health and nutrition are more likely to give birth to low weight infant, unable to secrete sufficient milk, affect’s house hold economy and less productive in the labor force. Besides this their food intake is also affected a lot by their traditions customs and belief system. Keeping these fact’s in mind the present research is designed to study the “Dietary assement of tribal lactating mothers in Koraput district of Odisha.” The objectives of the study were

- To study different maternal attributes.
- To know foods habits and dietary pattern of the mothers.
- To asses actual food and nutrient intake of the respondents in comparison to RDA.
- To know prevailing food fads and fallacies during lactation in the locality.

**RESEARCH METHODS**

The study was carried out in six villages of Koraput block and Damangodi block of Koraput district of Odisha. One hundred tribal lactating mothers were selected for the present study by random purposive sampling method having at least one infant of 0-12 months age group. The data were collected by questionnaire cum interview method in local language with the help of pretested and predesigned questionnaire in order the elicit information regarding socio-economic profile, maternal attributes, food habits, dietary pattern of lactating mothers ,prevailing food fads and fallacies. The information on dietary intake of mother was collected by 24 hours recall method.

The collected data were analyzed statically with the help of SPSS.

**RESEARCH FINDINGS AND DISCUSSION**

The results of the study are presented below.

**Socio-economic profile of the respondents :**

Table 1 revealed that majority of respondents (48%) were in the age group of 19-25 years. Nuclear family system was found to be prevalent in that area. Most of them (34%-38%) were either illiterate or below 5<sup>th</sup> class. Majority of the respondents were home makers (59%) and agriculture laborers (29%) having no income or less than Rs. 2500/ per month. Bairwa *et al.* (2017) found in their studies majority of the households surveyed were nuclear family.

Table 1 : Socio-economic profile of respondents (n=100)		
Socio-economic variables	Characteristics	Percentage%
Age	19-25age	48
	26-29 age	32
	30-35 age	20
Type of family	Nuclear	78
	Joint	22
No. of family member	Below-4	10
	4-6	77
	6-Above	13
Education	Illiterate	34
	Below-5 class	38
	5-10 class	23
Occupation	Above-10 class	5
	Home maker	59
	Agriculture labour	29
	Construction labour	8
Income(per-month)	Service	4
	Nil	44
	500-1000	12
	1000-1500	9
	1500-2000	3
	2000-2500	11
Above-2500	21	

**Maternal attributes:**

Results of Table 2 revealed that in majority cases age at first delivery was found to be 20-25 years (61%) followed by 15-20 years (32%). Number of pregnancy was found to be one or two in 64% mothers and history of abortion was found only in 5% respondents. It was interesting to note that 100% mothers were immunized by TT. However, number of folate tablets were taken above 90 only by 50% mothers. Majority of the mothers had normal delivery. Only 8% respondents were not

taking supplementary food from AWC due to poor quality food and long distance from their home.

Table 2 : Information on maternal attribute (n=100)		
Variables	Characteristics	Percentage %
Age at first delivery	15-20 age	32
	20-25 age	61
	25-30 age	7
	Above-30 age	-
No of pregnancy	1	31
	2	33
	3	18
	4	11
	5	6
	Above-5	1
Have you ever done any abortion	Yes	5
	No	95
Take TT injection	Yes	100
	No	-
Number of Iron folate tablet during pregnancy	10-30	2
	30-60	10
	60-90	30
	Above-90	50
	Nil	2
Type of delivery	Normal delivery	80
	Caesarean delivery	20
Receive any supplement form AWC	Yes	92
	No	8

### Food habits and dietary pattern of the respondents:

Majority of the respondents(96%) were non-vegetarian and were taking three meals per day. A sample menu of the respondents is given in Table 3.

Table 3 : Food habits and dietary pattern of the respondents		
Variable	Characteristics	Percentage %
Food habits	Vegetarian	4
	Non-vegetarian	96
Dietary pattern	Breakfast+Lunch+Dinner	85
	Lunch+Snack+Dinner	12
	Breakfast+Lunch+Snack+Dinner	3

It was interesting to note that most of the respondents took tea with biscuit / rice flake/puffed rice or sago/ragi in morning as breakfast. Rice with vegetable curry /egg /chicken was taken by them in lunch and dinner. Ragi and Rasam (prepared out of tamarind) was found to be common in their all meals. Occasionally they took non-vegetarian foods *i.e.* either on market day or on festive occasions. Milk consumption was found to be very less *i.e.* only with tea. During 0-6 month of lactation

they usually take either hot water or warm discarded water of rice in place of normal water, with a belief that normal water will cause cold both in mother and child (Table 4).

Table 4 : Sample menu of the respondents	
Variable	Menu
Breakfast	Tea with biscuit/ Rice flake / Puffed rice / sago / Ragi / water rice with onion garlic and Chilli.
Lunch	Rice/ Dal/ Vegetable curry/ potato fry/ Sago/ Ragi/ Tamarind(rasam )/ Egg / Chicken.
Snacks	Tea/Rice flake/ Ragi/Mixtur.
Dinner	Rice/Roti / Vegetable curry /potato fry /Dalma/Sago/Ragi

### Actual food intake of the respondents :

Results of Table 5 revealed that their diet was found to be dominated by cereals, other vegetables, roots and tubers. 27.24% and 11.56% excess intake of rice and 116.5% and 65.45% of excess intake of root and tubers were found in their diet among 0-6 month and 7-12 month mothers, respectively. The consumption Milk and milk product were found to be very less in comparison to RDA *i.e.* 95.75% for 0-6 month and 96.2% for 7-12 month of lactating mothers, respectively. Similarly meat,

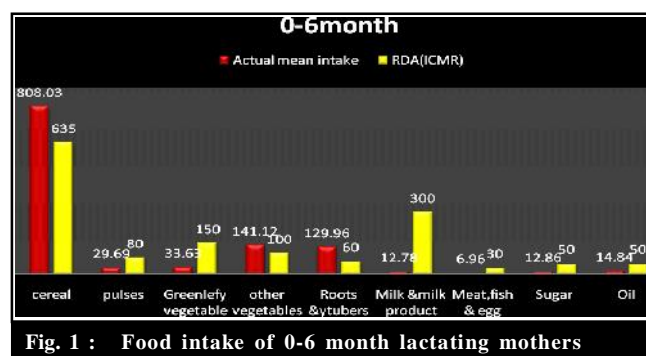


Fig. 1 : Food intake of 0-6 month lactating mothers

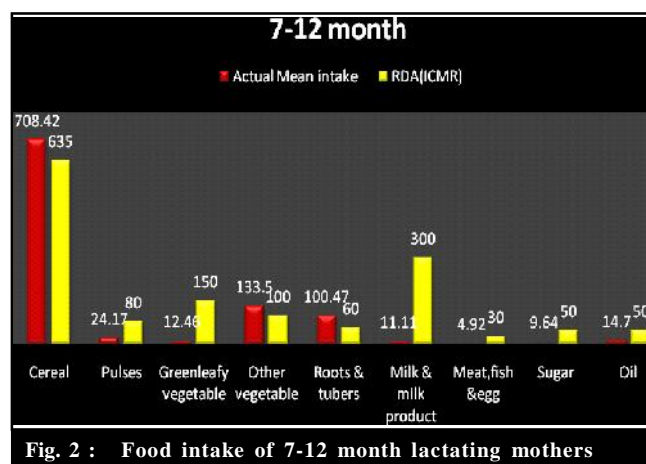


Fig. 2 : Food intake of 7-12 month lactating mothers

**Table 5 : Actual food intake of respondents in comparison to ICMR(RDA)**

Food stuff	0-6 Month			7-12 Month		
	Actual mean food intake	RDA (ICMR) standard	% of deficiency/ Excess	Actual mean food intake	RDA (ICMR) standard	% of deficiency/ Excess
Cereals	808.03±141.27	635	+27.24	708.42±204.05	635	+11.56
Pulses	29.69±28.69	80	-62.88	24.17±34.67	80	-69.78
Green leafy vegetables	33.63±86.67	150	-77.58	12.46±39.46	150	-91.69
Other vegetables	141.12±129.50	100	+41.12	113.50±105.05	100	+13.5
Roots and tubers	129.96±129.50	60	+116.6	100.47±85.83	60	+65.45
Milk and milk products	12.78±42.08	300	-95.75	11.11±39.78	300	-96.2
Meat, egg and fish	6.96±35.04	30	-76.8	4.92±5.79	30	-83.6
Sugar	12.89±10.46	50	-74.22	9.64±9.03	50	-80.72
Oil	14.84±2.64	50	-70.32	14.70±4.1	50	-70.6

**Table 6 : Actual mean nutrient intake of lactating mothers**

Nutrient	0-6 month			7-12 month		
	Actual mean intake	RDA (ICMR)	% of deficiency/Excess	Actual mean intake	RDA (ICMR)	% of deficiency/Excess
Calorie	3253.18	3475	-6.3	3197.58	3325	-3.8
Protein	67.46	75	-10.05	51.95	68	-24.69
Fat	36.98	65	-43.10	32.99	65	-49.29
Calcium	910.69	1400	-34.95	910.12	1400	-34.99
Iron	18.22	30	-39.26	12.95	30	-56.83

fish and egg consumption were found to be 76.8% and 83.6% less than RDA in 0-6 months and 7-12 months lactating mothers, respectively. Even if various types of leafy vegetable are available in their locality, they didn't take it because of food fads. Sugar and oil consumption were found to be less in comparison to ICMR (RDA) mainly due to poverty. Ogechi (2014) in his study found that cereals/cereal based dishes (1430) and leafy /non leafy vegetables (1079) were consumed more frequently while legumes were less frequently consumed on a daily basis.

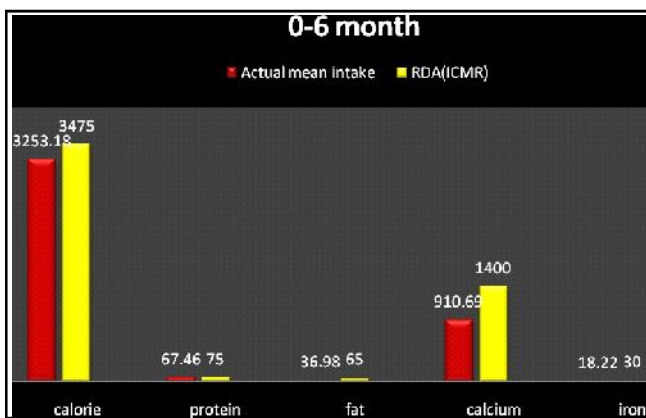
macro nutrient intake of the respondents were found to be less than RDA which varies from 6.3% to 43.10% in case of lactating mothers (0-6month) and 3.8 to 56.83 % in case of 7-12 months lactating mothers. Selimoglu (2013) found out in their study that micro nutrient insufficiency is an important health problem in Turkish mother and also Ogechi (2014) observed in his study energy (2279.01 ±446.79 kcal), protein (50.02 ±12.23g), calcium (339.21 ±186.35mg) and vitamin A(698.52 ±615.50µgRE) intake were lower than recommendations (Table 6).

**Actual mean nutrient intake of mothers :**

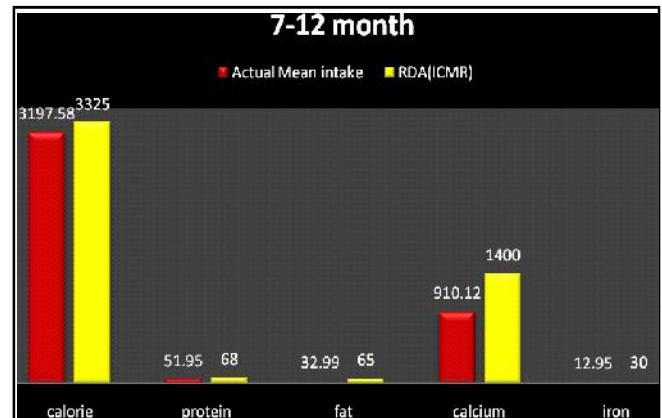
It was interesting to note that all actual micro and

**Food fads and Fallacies during lactating:**

The tribal mothers followed their traditional rituals



**Fig. 3 : Nutrient intake of 0-6 month lactating mothers**



**Fig. 4 : Nutrient intake of 7-12 month lactating mothers**

and cultural practices during their lactation period. Some of the foods advised during lactation such as sago and rice flake helps in milk secretion and dry ginger (sunthi) controls bleeding. Some of the foods avoided during lactation were pumpkin, bitter gourd, sea fish and even normal fish, ladies finger, malayu (poi) with a believe that they cause stomach disorder both in mother and child such as diarrhea, acidity, more salivation, respectively (Table 7). Similar work related to the present investigation was also carried out by Agarwal *et al.* (2006); Bairwa Kavita (2017) Bamiji Mahtab *et al.* (2008); Kaur *et al.* (2014); Lenka (2016), Ogechi (2014); Qamra *et al.* (2006) and Sharma (2003).

**Table 7: Foods fad and fallacies during lactation**

Foods Advised	Reason
Sago	Helps in milk secretion
Rice flake	Helps in milk secretion
Dry ginger(sunthi)	Controls bleeding
<b>Foods Avoided</b>	
Pumpkin	Stomach disorder both mother and child
Bitter gourd	Acidic
Sea fish even normal fish	Diarrhea
Ladies finger	Salivation
Malayu	Diarrhea

### Conclusion :

Dietary intake of mothers during lactation has a positive role not only to fulfill the nutritional needs of the mothers but also enables her to produce sufficient milk for her infant. But tribal mother's staying in isolate remote areas were generally not aware about it and lead their livelihood with their own culture, tradition, customs and belief system. Even if different development programmes are implemented to protect the health of mother and child, still then lacunas were observed in real practice. In the present study it was observed that the diet of the mother was cereal based with excess intake of roots, tubers and other vegetables, low intake functional foods was found in their diet. Thus it can be suggested that the mothers should be educated and awareness should be created on importance of foods during lactation to foresee a healthy future.

Authors' affiliations:

**JHULANA RANI BEHERA**, Rama Devi Women's University, BHUBANESWAR (ODISHA) INDIA

### ■ REFERENCES

- Agarwal, K.N., Agarwal, D.K., Sharma, A., Sharma, K., Prasad, K., Kalita, M.C., Khetarpaul, N., Kapoor, A.C., Vijayalekshmi, L., Govilla, A.K., Panda, S.M. and Kumari, P. (2006). Prevalence of anemia in pregnant and lactating women in India. *Indian J. Med. Res.*, **124** : 173–184.
- Bairwa Kavita, Lakhawatsarla, Bairwa, Tanuja and Verma, Arjun Kumar (2017). An exploratory study of diet and nutritional status of Shariya Tribal lactating women in Baran district of Rajasthan. *Onternational J. Sci., Environ. & Technol.*, **6**(1) : 927-934.
- Bamiji Mahtab, S., Murthy, P.V.V.S., Williams Livia, Rao M. Vishnu Vardhana (2008). Maternal nutritional status and practices and perinatal, neonatal mortality in Rural Andhra Prades, India. *Indian J. Med. Res.*, **127** : 44-51.
- Kaur, Bhagyapreet, Verma, R.K. and Himanshu, D. (2014). Nutritional status of pregnant women and an intervention of "Kap" of dietary practices among Dangolion Tharu Schedule Tribes Women. *Res. J. Family, Community & Consumer Sci.*, **2** (6) : 6-9.
- Lenka, Chandrshree (2016). Nutritional status and traditional health culture of tribal women : A study in Mayurbhanj district, Odisha. *Asian J. Home Sci.*, **11** (1) : 99-105.
- Ogechi, Ukegbu Patricia (2014). A study of the nutritional status and dietary intake of lactating women in Umuahia, Nigeria. *American J. Health Res.*, **2**(1):20-26.
- Qamra, S.R., Roy, J. and Mishra, D.K(2006). Food consumption pattern and associated habits of the *Bhil* tribe of Dhar district of Madhya Pradesh, Proceedings of National Symposium on Tribal health, *Regional Tribal Medical Centre, ICMR, Jabalpur*, 211-219.
- Selimoglu, Mukadder Ayse (2013). Importance of nutrition in lactating mothers in terms of both the mother's and the infant's health. *Turk. Arch. Ped.*, **2013** : 183-187.
- Sharma, B. (2003). Traditional practices followed during pregnancy and lactation by Gaddi tribe in Kangra district (H.P.). M.Sc. Thesis, Maharana Pratap University of Agriculture and Technology, Udaipur (Rajasthan) India.

12<sup>th</sup>  
Year  
★★★★★ of Excellence ★★★★★