

Original Research Article

High prevalence of food taboos and dietary restrictions in lactating mothers from coastal districts of a south Indian state: a hospital based study

Vikram Kudumula¹, Krishna Prasad Maram^{2*}, Bavana Nukala¹, Venkata Rama Rao Paturi²

¹Department of Pediatric Cardiology, Children's Heart Institute, ²Department of Pediatrics, Andhra Hospitals, Vijayawada, Andhra Pradesh, India

Received: 20 September 2021

Accepted: 30 October 2021

*Correspondence:

Dr. Krishna Prasad Maram,
E-mail: maramkp@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Adequate nutrition during pregnancy and lactation is pivotal for wellbeing of newborn infants. However, presence of traditional beliefs and taboos associated with food intake during pregnancy and lactation could interfere with nutritional needs of growing infants resulting in a variety of nutritional disorders. Our objective was to study the prevalence of dietary restrictions and food taboos practiced by lactating women from five coastal districts of the state of Andhra Pradesh, India.

Methods: It was a descriptive and observational study, conducted between November 2020 to January 2021 at the Children's Heart Institute, Andhra Hospitals, Vijayawada, Andhra Pradesh. The study was conducted on mothers attending the out-patient clinic of pediatric cardiology department using convenient sampling technique. A pretested questionnaire was used to collect the data.

Results: A total of 161 mothers have participated in the survey and, almost all of them (99.3%) have restricted one or more food item during lactation. Age of the mother, level of education and socio-economic status have no bearing on the prevalence of food restrictions and food taboos. Most commonly restricted food items include sweets, fruits, leafy vegetables, yogurt, some pulses, eggs and nuts. The concept of hot and cold food items is highly prevalent in the study population and lactating mothers have no knowledge of the nutritive value of the foods avoided/restricted.

Conclusions: Food restrictions and taboos associated with food intake during post-partum period are widespread in our study population. Improving girl child education and campaigning through print and digital media are important tools in fighting against harmful traditional practices interfering with adequate nutrition during pregnancy and lactation.

Keywords: Anganwadi workers, Beriberi, Food restrictions, Food taboos, Observational study

INTRODUCTION

Taboo is defined as prohibiting a particular place, person or a thing based on social or religious customs. Food taboos and food restrictions are an integral part of human society across the world regardless of location or climate. Most of these practices have evolved over centuries of trial and error and passed down generations, withstanding the test of time. Some of these practices have positive

effect while others may be useless or harmful.¹ Taboos and misconceptions related to food during pregnancy and lactation are in vogue in Indian culture since centuries. Balanced nutrition has a pivotal role during lactation as it aids in the post-partum recovery of mother and helps to meet the increased calorie and energy demands of pregnancy and lactation and to prevent nutritional stress.² However, food taboos and restriction of certain food items can deprive pregnant and lactating women from

adequate nutrition. Nutritional deficiencies in nursing mothers could result in a variety of disorders in young infants. Thiamine deficiency in exclusively breastfed infants nursed by mothers who are on thiamine deficient diet is known to manifest as infantile beriberi, severe pulmonary hypertension, acute encephalopathy and associated with long term neurological complications like epilepsy and impaired motor development.³⁻⁵

Many studies have reported the presence of food taboos and dietary restrictions in pregnant women and lactating mothers around the world. Women in south India avoid papaya during pregnancy because of fear of abortion.⁶⁻⁸ Korean women refrain from coffee during lactation as they believe that it could reduce breast milk production.⁹ Many such food taboos lack scientific explanation and reasoning. While there are plenty of studies from India mainly focusing on prevalence and pattern of dietary restriction in pregnant mothers, only a limited number of studies have focused on the food restrictions observed during early lactation.^{6,7,10,11} Keeping this in view and after witnessing a number of infants presenting with cardiac beriberi and severe reversible pulmonary hypertension secondary to maternal thiamine deficiency, we undertook this study to know the prevalence of dietary restrictions and food taboos in lactating mothers in our geographic area. We made an attempt to explore the traditional beliefs and practices surrounding postpartum period in order to give inputs to government policymakers and health care providers for provision of logical and culturally acceptable health-care interventions.

This study aimed to study the prevalence of dietary restrictions and food taboos practiced by lactating women from five coastal districts (Guntur, Krishna, East Godavari, West Godavari and Prakasham) of the state of Andhra Pradesh, India.

METHODS

It was a descriptive and observational study, conducted between November to January 2021 at Children's heart institute, Andhra Hospitals, Vijayawada, Andhra Pradesh. The study was conducted on mothers attending the outpatient clinic of pediatric cardiology department using convenient sampling technique. A pretested questionnaire containing demographic information and questions regarding dietary pattern, foods avoided and foods preferred during lactation and reasons for avoidance/preference was used to conduct face to face interview of mothers who had children less than five years old. The questionnaire also included questions regarding utilization of supplementary nutrition services offered under YSR Sampoonna Poshana Plus scheme by the Government of India. The questions were asked in their native language (Telugu) for convenience. The interview was conducted by a trained medical officer and a registered nurse. Informed consent has been taken from the mother for participation in the study and anonymity

has been assured to all mothers who volunteered to share their experience. Each interview took an average of 10 to 15 minutes.

Statistical analysis

Gathered data was entered into a Microsoft excel sheet. Quantitative data regarding their sociodemographic conditions were expressed as frequency and percentage (categorical data) and mean \pm SD (continuous data).

RESULTS

A total of 161 mothers have participated in the survey. The mean age of the respondents was 25.9 (SD \pm 2.43) years. Most of the nursing mothers (95%) are educated (Figure 2) and belong to middle (58%) and lower socio-economic class (42%) respectively (Table 1).

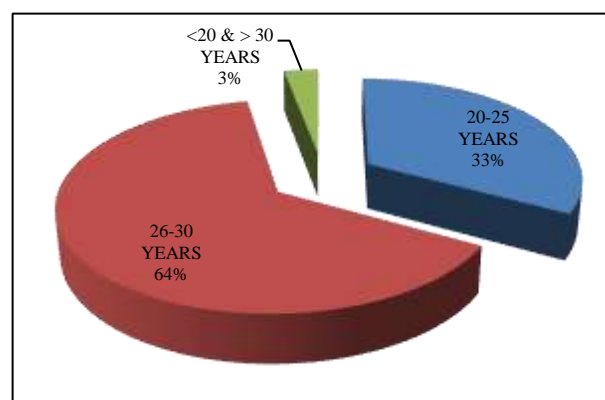


Figure 1: Pie chart showing age distribution of mothers.

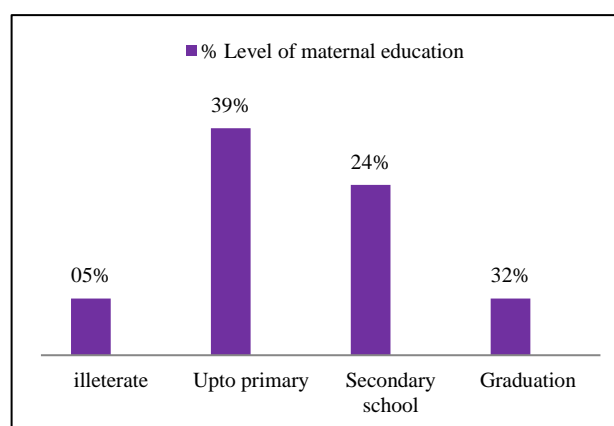


Figure 2: Bar chart showing level of maternal education.

Of 161 mothers, almost all of them 160/161 (99.3%) have restricted one or more food item during lactation. Age of the mother (Figure 1), level of education (Figure 2) and socio-economic status (Table 1) do not appear to have an influence on the prevalence of food restrictions and food taboos.

Table 1: Socioeconomic status of lactating mothers (according to modified Kuppaswamy scale).

Economic class/ income group	Number	Percentage
Upper middle class	46	29
Lower middle class	46	29
Upper lower class	68	42

Our survey showed majority of mothers (80%) resorted to general food restriction for first six months during post-partum period while a small proportion of them (20%) followed additional, more stringent dietary restriction for the first three weeks post-partum. This included milk and bread for breakfast and supper and, only a single major meal for lunch consisting of polished rice with rasam (containing garlic and cloves), and coriander powder. It is believed that coriander powder has antiemetic properties and aids in digestion while garlic and cloves have galactagogue effect. General food restriction during post-partum lasted for one month to a maximum of six months. Mothers giving birth through a cesarean section followed more stringent dietary restrictions compared to those who had a vaginal delivery.

Table 2: List of foods avoided/restricted during early lactation.

Foods avoided/restricted during lactation	Reason	No (%)
Sweets, fruits (banana, watermelon, sapota, guava, oranges) and tomato	Upper respiratory tract infection in the baby	90
Brinjal, hibiscus sabdora (gongura)	Allergic reactions in the baby	80
Tubers and raw banana	Muscle wasting	80
Hibiscus sabdora (gongura), chicken, sesame seeds, papaya, mangoes, raagi and jowar flour	Increase body heat (hot foods)	10
Yogurt/curd	Urinary tract infections in the mother	60
Eggs	Alopecia and ear discharge in the baby	60
Dhal	Induces pus formation	70
Nuts, peanuts	Diarrhea in the baby	20

Table 2 illustrates the type and list of foods avoided or restricted during lactation including various reasons for avoidance quoted by nursing mothers. Fruits, tubers and leafy vegetables form major proportion of restricted food items in lactating mothers

On the other hand, some foods are particularly favored during lactation based on similar traditional beliefs that lead to avoidance of certain foods (Table 3). Minced meat

(mutton keema) is given liberally a month after post-partum as it is thought to aid in faster wound healing. It is believed that consumption of sesame seed residual powder (known as telagapindi in local language) has a tendency to multiply the milk production.

Table 3: Foods preferred during lactation.

Foods	Reason for consumption
Coffee, garlic, dhaniya powder, milk, bread	Suture wound healing and enhances milk production.
Fish	Improves eye sight and IQ levels of the child
Bottle guard, bitter guard, ridge guard, Gerkin (dhondakai in local language)	Acts as cooling agents
Rasam, coriander powder	Antiemetic properties and improves digestion
Saffron milk, carrot and beetroot	Confers fair skin complexion to the baby

All nursing mothers firmly believed that food restrictions during lactation would help in faster recovery from trauma of labor and enhance breast milk production as well as, promote overall health of the mother baby dyad. They are barely aware of the nutritional value of restricted food items nor its effect on the growth and nutrition of the infant. None of the interviewed mothers could explain the scientific rationale behind restriction of certain food items during lactation but followed them blindly based on advice given by the elders in the family (mother or mother-in-law, or both, other family members and friends). Interestingly, 10% of mothers quoted that advice regarding food restrictions during pregnancy and lactation has come from health care professionals (Obstetricians and family physicians).

A significant proportion of nursing mothers [83% (134/161)] had access to Government sponsored supplementary food programme (YSR Sampoorna Poshana Plus scheme) which provides rice, dal, eggs, raagi flour and jowar flour, peanuts and dry fruits to pregnant and lactating mothers through a local network of anganwadi centers. However, only half (51%) of mothers utilized it due to cultural taboos attached to their consumption. Surprisingly, food items supplied through supplementary nutrition programme are often consumed by members of the family other than the nursing mother.

DISCUSSION

Studies around the globe showed persistence of food restrictions during pregnancy continuing into the post-partum period. Our survey showed universal presence of taboos and food restrictions during post-partum period in the coastal districts of Andhra Pradesh state. These

restrictions bear no relation to education status, age and socio-economic status of lactating mothers. The pattern of food restriction doesn't seem to vary much between different regions of the same geo-political area. The principle reasons behind these food restrictions appear to be prevention of harm to the mother and baby dyad, recovery from trauma of child birth and improvement in breast milk production.⁸

Our study showed prevalence of food restriction in almost all (99.3%) women during lactation. This is much higher than similar studies in the past which showed a prevalence ranging between 50 to 65%.¹²⁻¹⁶ In addition, food taboos during post-partum period tend to be less frequent compared to those existed during pregnancy. Food restrictions were continued for at least one month and extended upto to six months post-partum period. A study from Malaysia showed continuation of food restrictions for 30 to 44 days following delivery.⁹ Another study done on tribal population of north costal Andhra Pradesh state showed avoidance of breast milk for first three days after delivery as mother is denied food for first 3 days and early feeding assumed to result in indigestion in the baby. Diet for first one month consisted of polished rice mixed with cumin powder, dried ginger and salt. The preferred food during lactation consisted of leafy vegetables, bottle gourd and lady finger.¹⁷

There appear to be wide variation in the type of food restrictions across various parts of the world. The concept of categorizing food items into "hot" and "cold" seem to be old and continued to be carried across generations.¹⁸ Similar to other studies, foods that are labelled as "hot" "are avoided as they are thought to interfere with lactation and those labelled as "cold" are preferred during lactation due to their positive effect on breast milk production.^{7,8,19,20} Chicken, sesame seeds, raagi flour, certain leafy vegetables are considered hot foods in our study which is in line with other similar studies.⁸ In contrast to our findings however, a study by Niloufer et al, in Pakistan showed food items considered "cold" were avoided during lactation.¹⁰ Although food considered "cold" (most vegetables) are consumed liberally in our study, most vegetables and fruits were considered "cold" and were prohibited during lactation in a study done on Chinese women.²¹ Similar findings were noted by other authors from studies in India and Mexico where curd, tea, fruits are avoided labelling them as cold items.^{15,22}

Brinjal as a cause of allergic disorders in the baby is found in another study.²² A study by Catherine et al showed avoidance of potatoes, spices, fish as they are labelled "hot" foods.²⁰ It is believed that eggs and fish cause alopecia while, sesame seeds causes wheezing in the infant. Coriander, spices are considered antiemetic, and fish would increase intelligence of the child. Some studies noted garlic and onion fried in oil or ghee was given to the mother twice daily for a week to recover fast from stress of child birth.^{16,20} A few studies from India (West Bengal) and China showed restriction of few

vegetables and fruits like cucumber, watermelons, beans, and guava due to fear of Infantile colic and diarrhea.^{19,23} Interestingly, consumption of high volumes of tea and coffee was believed to encourage lactation in a study on Zulu women which is not in line with our study findings.¹⁴ Another study from a south Indian state (Tamil Nadu) found avoidance of curd, butter, cheese, amla (gooseberry), grapes, custard apple and green leafy vegetables as they are considered "cold" items and consumption of them during lactation cause cold and cough to the child.¹⁶

Many studies have demonstrated thiamine deficiency in exclusively breastfed infants of mothers who are on a restricted diet consisting of polished rice.^{4,24} Our study showed polished rice as a predominant component of restricted diets consumed by nursing mothers which explains the high incidence of thiamine deficiency disorders (beriberi, pulmonary hypertension, cognitive impairment) in our geopolitical area. Maternal malnutrition secondary to restricted diets could also result in deficiency disorders of iron, iodine, vitamin A, and zinc and other micronutrients.²⁵

In contrast to other studies, our study showed maternal education had no influence on traditional food taboos during lactation. Many studies showed maternal education having a significant impact on traditional practices related to food intake during pregnancy and lactation.^{7,13} Women pursuing higher education tend to disregard many traditional dietary practices related to pregnancy and lactation as having no scientific basis.^{10,19,26} While many studies quote mother, mother in law or both and friends as source of information and advice for young mothers, our study found health care professionals actively involved in providing unscientific dietary advice during lactation period in upto 10% mothers which is a cause for concern. Despite the Government efforts to improve the health and nutrition of pregnant and nursing mothers through supplementary nutrition programme, presence of various traditional beliefs and taboos related to their consumption is coming in the way of successful implementation of such programmes.

The main limitations of our study were small sample size which makes generalization of findings to the entire population difficult. Presence of recall bias was always a possibility and the difficulty and hesitation of participants to answer questions in the presence of mother and mother-in-law could not be ignored.

CONCLUSION

It is evident that food taboos and food restrictions during post-partum period are rampant in our study population. This study underscores the importance of improving the nutritional knowledge and rectifying the wrong beliefs regarding diet of pregnant and lactating women utilizing various print and digital media. It is important to impart

appropriate training in nutrition during pregnancy and lactation and increase the awareness among relevant health care professionals as well as traditional rural health care workers (Anganwadi workers) as more than half of Indian population lives in rural areas. There is an urgent need to replace polished rice with unpolished one in the menu of the Government sponsored nutritional programme aimed at improving the health and nutrition of pregnant and lactating women, as it is proven to be a major culprit in the etiology of thiamine deficiency disorders. Supervision and regular checks by Anganwadi workers are necessary to prevent misuse of the Government sponsored supplementary food by the beneficiaries. Special emphasis must be placed on girl child education as studies showed education plays a key role in resisting and curtailing harmful traditional practices. Efforts from the Government and simultaneous active participation from the health care professionals and public go a long way in improving the nutritional status of pregnant and lactating women and ensuring overall well-being of children.

ACKNOWLEDGEMENTS

The authors would like to thank Mrs. Usha who has been of immense help during data collection.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Park K. Park's Textbook of Preventive and Social Medicine. 21th edn. Jabalpur: M/S Banarsidas Bhanot Publishers; 2011:603.
2. Park K. Park's Textbook of Preventive and Social Medicine. 18th edn. Jabalpur: M/S Banarsidas Bhanot Publishers; 2007:387.
3. Harel Y, Zuk L, Guindy M, Nakar O, Lotan D, Fattal-Valevski A. The effect of subclinical infantile thiamine deficiency on motor function in preschool children. *Matern Child Nutr*. 2017;13(4):e12397.
4. Sastry UM, Jayranganath M, Kumar RK, Ghosh S, Bharath AP, Subramanian A, et al. Thiamine-responsive acute severe pulmonary hypertension in exclusively breastfeeding infants: A prospective observational study. *Arch Dis Childhood*. 2021;106(3):241-6.
5. Mimouni-Bloch A, Goldberg-Stern H, Strausberg R, Brezner A, Heyman E, Inbar D, Kivity S, Zvulunov A, Sztarkier I, Fogelman R, Fattal-Valevski A. Thiamine deficiency in infancy: long-term follow-up. *Pediatr Neurol*. 2014;51(3):311-6.
6. Parmar A, Khanpara H, Kartha G. A study on taboos and misconceptions associated with pregnancy among rural women of Surendranagar district. *Age*. 2013;4(1):40-3.
7. Rajkumar P, Anuj M, Vedapriya DR, Khan MI, Raghavia M. Taboos and misconceptions about food during pregnancy among rural population of Pondicherry. *Calicut Med J*. 2010;8(2).
8. Chakrabarti S, Chakrabarti A. Food taboos in pregnancy and early lactation among women living in a rural area of West Bengal. *J Fam Med Prim Care*. 2019;8(1):86-90.
9. Jeong G, Park SW, Lee YK, Ko SY, Shin SM. Maternal food restrictions during breastfeeding. *Korean J Pediatr*. 2017;60(3):70-6.
10. Ali NS, Azam SI, Noor R. Women's beliefs and practices regarding food restrictions during pregnancy and lactation: a hospital based study. *J Ayub Med Coll Abbottabad*. 2004;16(3):29-31.
11. Lakshmi G. Food preferences and taboos during ante natal period among the tribal women of the north coastal Andhra Pradesh. *J Community Nutr Health*. 2013;2(2):32-3.
12. Sein KK. Beliefs and practices surrounding postpartum period among Myanmar women. *Midwifery*. 2013;29(11):1257-63.
13. Mukhopadhyay S, Sarkar A. Pregnancy-related food habits among women of rural Sikkim, India. *Public Health Nutr*. 2009;12(12):2317-22.
14. Ramulondi M, de Wet H, Ntuli NR. Traditional food taboos and practices during pregnancy, postpartum recovery, and infant care of Zulu women in northern KwaZulu-Natal. *J Ethnobiol Ethnomedi*. 2021;17(1):1-9.
15. Santos-Torres MI, Vásquez-Garibay E. Food taboos among nursing mothers of Mexico. *J Health Popul Nutr*. 2003;142-9.
16. Banu KK, Prathipa A, Anandarajan B, Sheriff AMI, Muthukumar S, Selvakumar J. Food taboos during antenatal and postpartum period among the women of rural and urban areas of Tamilnadu. *Int J Biomed Res*. 2016;7(8):393-6.
17. Rao PD, Babu MS, Rao VN. Persistent traditional practices among the tribals of north coastal Andhra Pradesh. *Stud Tribes Tribals*. 2006;4(1):53-6.
18. Ferro-Luzzi EG. Food avoidance of pregnant women in Tamil Nadu. *Food Ecol Culture*. 1980;101-8.
19. Hassan U. Beliefs of women regarding food during lactation. *Pak Armed Forces Med J*. 2013;63(2):266-70.
20. Catherin N, Rock B, Roger V, Ankita C, Ashish G, Delwin P, et al. Beliefs and practices regarding nutrition during pregnancy and lactation in a rural area in Karnataka, India: a qualitative study. *Int J Community Med Public Health*. 2015;2(2):116-20.
21. Poh BK, Wong YP, Karim NA. Postpartum dietary intakes and food taboos among Chinese women attending maternal and child health clinics and maternity hospital, Kuala Lumpur. *Malay J Nutr*. 2005;11(1):1-21.
22. Kibr G. A narrative review of nutritional malpractices, motivational drivers, and consequences in pregnant women: evidence from

recent literature and program implications in Ethiopia. *Scient World J*. 2021;2021.

23. Liu N, Mao L, Sun X, Liu L, Chen B, Ding Q. Postpartum practices of puerperal women and their influencing factors in three regions of Hubei, China. *BMC Public Health*. 2006;6:274.
24. Whitfield KC, Smith G, Chamnan C, Karakochuk CD, Sophonneary P, Kuong K, et al. High prevalence of thiamine (vitamin B₁) deficiency in early childhood among a nationally representative sample of Cambodian women of childbearing age and their children. *PLoS Negl Trop Dis*. 2017;11(9):e0005814.
25. Ahmed T, Hossain M, Sanin KI. Global burden of maternal and child undernutrition and micronutrient deficiencies. *Ann Nutr Metab*. 2012;61(1):8-17.
26. Ergenekon-Ozelci P, Elmaci N, Ertem Saka M. Breastfeeding beliefs and practices among migrant mothers in slums of Diyarbakir, Turkey, 2001; *Eur J Public Health*. 2006;16(2):143-8.

Cite this article as: Kudumula V, Maram KP, Nukala B, Paturi VRR. High prevalence of food taboos and dietary restrictions in lactating mothers from coastal districts of a south Indian state: a hospital based study. *Int J Community Med Public Health* 2021;8:5901-6.