

Documentation of special foods given to promote lactation in Dharwad district of Karnataka

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(Received: July, 2015 ; Accepted: January, 2016)

Abstract: An investigation was undertaken on 30 mothers of Dharwad, Karnataka to document special foods given to promote lactation. Ghee, dry fruits, buttermilk, tender coconut water (63.33% each), curds and egg (56.66% each) and fruit juice (50%) were consumed by more than 50 per cent of the pregnant women prior to delivery. Most common special foods given during lactation upto first week were vermicelli payasa (76.66%), shira and sago khichadi (70.00% each). Normal diet was resumed after one month. Mothers consumed lesser quantity of water when the boy baby was born as compared to girl baby. Avoidance of foods like green chilies (86.66%), pickles (76.66%), brinjal (70.00%), papaya (66.66%), mango (60.00%), fish (46.66%), and curds (43.33%) were reported by majority of the mothers from Dharwad.

Key words: Antinunde, Kobrikhara, Lactation, Special foods

Introduction

Lactation is a normal physiological process that impedes considerable nutritional demands on the mother. The period of lactation is a time of greater nutritional stress for the mother than that of pregnancy. In India it is the custom to breast feed infants for prolonged periods even up to three years (Shubhangna and Raj, 2004). WHO also recommends exclusive breast feeding for six months. The quality of mother's milk depends very much on the mother's diet. Adequate nutritional status of women is important for good health of women themselves as well as for the health of their offspring (Lancet, 2008). Certain foods are provided to the pregnant women to improve lactation and ease the process of delivery while a few foods are included at the time of delivery to facilitate speedy labour and to avoid complications. Traditional food supplements are commonly consumed during early part of lactation to increase lactational performance and health of mothers, irrespective of the income, education, occupation, religion, places of dwelling etc. Special foods are made up of several ingredients including herbs, spices, nuts and condiments besides cereals, pulses, green leafy vegetables, milk and milk products. These herbs and spices happen to be good sources of micronutrients. During lactation many foods are excluded from the diet of the lactating mothers with the concept that the food received by the infant through breast milk may harm the child. Cultural restrictions related to foods are selectively imposed on lactating women (Winch *et al.*, 2008). These practices are upheld and enforced by mother-in-law, aunts, and other elderly female relatives in the family. Since many decades studies have been reported on the foods of lactation. However, with changing lifestyle and working mothers who are figure conscious, changes in these diets are expected. Therefore, a need was identified to study the beliefs and practices regarding the food intake during lactation in the current scenario. Keeping this in view, present study has been elucidated to study the special foods consumed by lactating mothers of Dharwad during 2013-14.

Material and methods

For the study 30 mothers having at least one live child were selected randomly from four locations of Dharwad city of Dharwad district (Karnataka) during 2014. Data pertaining to general information, foods provided during pregnancy to improve lactation, foods given prior to delivery, special foods consumed and avoided during lactation were collected using a self structured questionnaire by personal interview method. Data were tabulated and percentages calculated.

Results and discussion

Majority of the respondents (33.33%) belonged to the age group of 41-45 years followed by 20-25 years (30%). Least number of the respondents (3.3%) were in the age range of 36- 40 years (Table 1). Most of the respondents (36.67%) had pre-university education. Higher per cent of them (66.76%) were Hindus and only 33.33 percent were Muslims. It was noted that 48.33 per cent of the subjects were housewives and around 20 per cent of the subjects were agricultural laborers. About 63.33 per cent of the subjects were staying in joint family setup and 43.33 per cent were having 5-7 members in their family followed by more than eight members (36.67%). Half of the study population from Dharwad were non-vegetarians, 26.67 and 23.33 per cent were vegetarian and ova-vegetarian respectively. More than half of the respondents (56.67%) had an income of less than Rs. 10000 followed by Rs. 10000-30000 (23.33 %). Only 6.67 and 3.37 per cent had income ranging between Rs. 30000-60000 and more than Rs. 90000 respectively.

It can be seen from the Table 2 that 90 per cent subjects were not given any special foods during pregnancy. Special foods are those which are not commonly consumed daily by everyone but given during certain occasions in slightly higher quantities. Ghee, dry fruits, buttermilk, tender coconut water (63.33% each), curds and egg (56.66% each) and fruit juice (50%) were consumed by more than 50 per cent of the pregnant women. Mothers reported consumption of vermicelli *payasa* (43.33%), *shira* and mutton *curry* (30.00% each), green leafy vegetables and green gram *dhal ladoo* (23.33% each). Less than 15 per cent of the respondents

Table 1. Demographic profile of the respondents N = 30

Variables	Classification	N	%
Age (Years)	20-25	9	30.00
	26-30	7	23.33
	31-35	3	10.00
	36-40	1	3.33
	41-45	10	33.33
Education	Illiterate	2	6.67
	Primary school	2	6.67
	Middle school	3	10.00
	High school	5	16.67
	PUC	11	36.67
	Graduate	5	16.67
Religion	Postgraduate	2	6.67
	Hindu	20	66.76
Occupation	Muslim	10	33.33
	House wife	16	53.33
Family type	Agricultural laborer	6	20.00
	Service	8	26.67
	Joint	19	63.33
Family size	Nuclear	11	36.67
	d" 4	6	20.00
	5-7	13	43.33
Food habits	>8	11	36.67
	Vegetarian	8	26.67
	Non vegetarian	15	50.00
Monthly family Income(Rs)	Ova vegetarian	7	23.33
	<10000	17	56.67
	10000-30000	7	23.33
	30000-60000	2	6.67
	60000-90000	3	10.00
	>90000	1	3.37

reported consumption of sprouts and rice *ganji* (13.33% each) and soups of vegetables (13.33%), chicken and mutton (10.00%). Protein supplements like protein and biovit were consumed by 36.66 per cent of educated well aware respondents. The consumption of buttermilk and curds as cooling foods, green leafy vegetables to increase breast milk secretion, consumption of commercial food supplements such as proteinx and biovit by the pregnant women was reported by Sangalad (2011) in rural areas of Hubli Taluk in Dharwad district of Karnataka. Kavitha *et al.* (2013) in Ramanathapuram district of Tamilnadu also reported the consumption of iron tablets and tonics regularly by pregnant women to combat iron deficiency which was common during pregnancy. It is interesting to know that the inclusion of pharmaceutical supplements were not seen in the researches carried out during nineties but with the

Table 2. Foods included during pregnancy to improve lactation N = 30

Foods [#]	N	%
Normal food	27	90.00
Ghee	19	63.33
Dry fruits	19	63.33
Buttermilk	19	63.33
Tender coconut water	19	63.33
Curds	17	56.66
Egg	17	56.66
Fruit juice	15	50.00
Milk with saffron	14	46.66
Vermicelli <i>payasa</i>	13	43.33
Chicken <i>curry</i>	12	40.00
Proteinx and biovit	11	36.66
<i>Shira</i>	9	30.00
Mutton <i>curry</i>	9	30.00
Green leafy vegetables	7	23.33
Green gram <i>dhal ladoo</i>	7	23.33
<i>Khichadi</i>	6	20.00
Fruits and vegetables	6	20.00
Rice <i>ganji</i>	4	13.33
Sprouts	4	13.33
Vegetable soup	4	13.33
Chicken or mutton soup	3	10.00
Butter	3	10.00

Multiple answers possible

technological advancement, easy availability and affordability of medical supplements like IFA tablets and protein supplements there was an upsurge in the inclusion of these supplements in the current study.

Foods given to the mothers just before delivery are mentioned in the Table 3. Most of the mothers (40%) were given *Ajwain kada* (1 cup of 50 ml) for the reason that delivery becomes easy as pain increases. About 26.66 per cent of the subjects preferred giving ghee to the mothers at an amount 100 g as it was considered to provide strength to the body during delivery. Black tea, *jeera kada* (1 glass of 150 ml) and coffee (1 cup of 50 ml) were given to 30, 16.66 and 6.66 per cent of the mothers as it was considered to speed up labor pain. Respondents reported consumption of boiled vermicelli water (43.33%), rice *ganji* with jaggery (10%) and fruit juice (3.33%) with a notion that boiled vermicelli water increases labor pain and results in normal delivery, rice *ganji* with jaggery provide strength to the mother and fruit juice increases immunity. Women nowadays are more conscious about their health and

Table 3. Foods provided just before delivery

Foods [#]	Number	%	Amount	Reasons perceived by the respondents
Milk	14	46.66	1 glass (150ml)	Provide energy
Boiled vermicelli water	13	43.33	½ glass (75ml)	For normal delivery, speeds up labour
<i>Ajwain kada</i>	12	40.00	1 cup (50ml)	Speeds up labor, reduces constipation
Black tea	9	30.00	1 cup (50ml)	Speeds up labour
Ghee	8	26.66	1 katori (100g)	Provide strength to the body, energy rich
<i>Jeera kada</i>	5	16.66	1 glass (150ml)	Ease in delivery, speeds up labour
Rice <i>ganji</i> with jaggery	3	10.00	1 glass (150ml)	Provide strength to the mother
Coffee	2	6.66	1 cup (50ml)	Speeds up labour
Fruit juice	1	3.33	1 glass (150ml)	Increases immunity

Multiple answers possible

Table 4. Foods included during lactation by Dharwadians

N= 30

Foods [#]	I st week	II nd week	I st month	II nd month	III rd month
Rice <i>ganji</i>	21 (70.00)	-	-	-	-
<i>Shira</i>	21 (70.00)	-	-	-	-
Ginger <i>kada</i>	10 (33.33)	-	-	-	-
<i>Ajwain kada</i>	5 (16.66)	-	-	-	-
Black tea	3 (10.00)	-	-	-	-
Vermicelli <i>payasa</i>	23 (76.66)	2 (6.66)	-	-	-
<i>Badam harira</i>	8 (26.66)	6 (20.00)	-	-	-
Sago <i>khichadi</i>	21 (70.00)	15 (50.00)	10 (33.33)	6 (20.00)	-
Milk	27 (90.00)	21 (70.00)	19 (63.33)	19 (63.33)	19 (63.33)
Boiled <i>dhal</i>	26 (86.66)	23 (76.66)	24 (80.00)	28 (93.33)	28 (93.33)
Rice with ghee	15 (50.00)	10 (33.33)	23 (76.66)	27 (90.00)	27 (90.00)
<i>Alvi payasa</i>	3 (10.00)	17 (56.66)	21 (70.00)	21 (70.00)	21 (70.00)
Normal diet	7 (23.33)	12 (40.00)	26 (86.66)	30 (100.00)	30 (100.00)
Coffee	7 (23.33)	6 (20.00)	6 (20.00)	4 (13.33)	2 (3.33)
Methi leaves <i>bhaji</i>	-	20 (66.66)	21 (70.00)	26 (86.66)	27 (90.00)
Shepu <i>bhaji</i>	-	19 (63.33)	21 (70.00)	21 (70.00)	21 (70.00)
Methi seeds chutney	-	19 (63.33)	7 (23.33)	7 (23.33)	7 (23.33)
<i>Antinunde</i>	-	16 (53.33)	19 (63.33)	19 (63.33)	19 (63.33)
<i>Kobrikara</i>	-	16 (53.33)	18 (60.00)	18 (60.00)	19 (63.33)
Boiled egg	-	11 (36.66)	16 (53.33)	16 (53.33)	16 (53.33)
Curry leaves chutney	-	9 (30.00)	9 (30.00)	9 (30.00)	9 (30.00)
Chicken soup	-	7 (23.33)	-	-	-
Vegetable soup	-	7 (23.33)	1 (3.33)	1 (3.33)	1 (3.33)
Wheat chapatti	-	5 (16.66)	17 (56.66)	19 (63.33)	21 (70.00)
Mutton soup	-	4 (13.33)	4 (13.33)	4 (13.33)	4 (13.33)
Chicken <i>curry</i>	-	2 (6.66)	8 (26.66)	8 (26.66)	8 (26.66)
Mutton <i>curry</i>	-	2 (6.66)	7 (23.33)	7 (23.33)	7 (23.33)
Garlic chutney	-	-	18 (60.00)	19 (63.33)	19 (63.33)
Buffalo milk	-	-	2 (6.66)	2 (6.66)	2 (6.66)

Multiple answers possible

Figures in the parenthesis indicates percentage

unable to bear the brunt of labour pain, hence prior to the expected date of delivery, they prefer admitting themselves to the maternity centers as well as prefer caesarian section delivery, hence there is a decrease in the trends of consumption of foods prior to delivery over the decade.

A close perusal of Table 4 indicated that majority of the respondents preferred giving rice *ganji* and *shira* (70%) only for the first week of lactation. Consumption of ginger *kada*, *ajwain kada* and black tea were also preferred by few respondents only in the first week. Inclusion of vermicelli *payasa* and *badam harira* was reported only upto second week of lactation. More than half of the study population preferred giving sago *khichadi* and milk during first two weeks of lactation which reduced slowly by third month. Consumption of rice with ghee, boiled *tur dhal* and *alvi payasa* and normal diet were slowly increased from first week to third month of lactation. More than half of the study population incorporated *methi* leaves *bhaji* (66.66%), *shepu bhaji*, *methi* seeds *chutney* (63.33% each), *antinunde* and *kobrikara* (53.33%) in their diet after first week and continued upto third month with a belief that these foods enhance milk production, provide strength and immunity to the body. Garlic chutney and buffalo milk was introduced by 60 and 6.66 per cent of the respondents in first month of lactation and continued. A few respondents reported inclusion of wheat chapatti, vegetable soup, chicken curry, mutton curry and mutton soup during

second week of lactation. However, majority of them stated inclusion and continuation of these foods upto third month of lactation. In line with the present study Dinu Kumari (2015) in northern India and Shaikh (2011) in southern part of the country reported that lactating mothers consumed *atta ka halwa* and *wheat rab* for the first 15 days after delivery as hot foods, to increase breast milk flow, to decrease pain and overcome weight losses. A noticeable change in the preparation and consumption of these foods is noticed over the decades. With the women becoming weight conscious, though affordable, the amount of ingredients like ghee, dry fruits used in the preparation were found to be reduced. Further, advancements in medical profession has called for replacement of these nutrient dense foods with pharmaceutical supplements.

Fried foods were avoided by 93.33 per cent of the mothers for a period of six months due to the reason that, it causes gastric problems (Table 5). Green chilies (86.66%) and pickle (76.66%) were avoided by women with a perception that it leads to acidity, allergy and burning sensation of stomach in infants. Pulses like bengal gram, pea and black gram were believed to cause flatulence and acidity hence avoided by 63.33 per cent of the mothers till six months. Rice (60.00%) was considered as cold food and avoided for three months. Brinjal was avoided for a period of six months by 70 per cent of the women as it was considered to produce allergic reactions to the mother. Cold foods like potatoes (63.33%)

Table 5. Foods avoided during lactation

N= 30

Foods [#]	Number	%	Duration of avoidance (mon)	Reasons perceived by the respondents
Fried foods	28	93.33	6	Causes gastric problems
Green chilies	26	86.66	12	Acidity, allergy and burning sensation in stomach of infant
Pickles	23	76.66	12	Allergy and acidity
Brinjal	21	70.00	9	Allergic reactions
Papaya	20	66.66	6	Lead to pimples and prickles
Banana	19	63.33	6	Cold food
Pulses (black gram Bengal gram, pea)	19	63.33	6	Causes flatulence and acidity
Potatoes	19	63.33	6	Cold food and septic discoloration of breast milk
Spinach	19	63.33	6	Lead to infection
Citrus fruits	19	63.33	8	Cold food
Rice	18	60.00	3	Skin allergy
Mango	18	60.00	3	Causes scaly structure on skin
Fish	14	46.66	8	Cold food
Curds	13	43.33	6	Cold food and causes gastric
Capsicum	12	40.00	6	Produces heat and prickles
Chicken	11	36.66	6	Produces heat
Mutton	9	30.00	6	Produces heat
Egg	8	26.66	3	Acidity
Tea and coffee	8	26.66	2	Prickles and skin allergy
Pine apple	6	20.00	2	Cold food
Cauliflower	2	6.66	2	

Multiple Answers Possible

capsicum (40.00%) and cauliflower (6.66%) were avoided for a period of two to nine months. Papaya (66.66%), banana (63.33%) mango (60.00%), pineapple (20.0

0%), were avoided by the subjects for a period of two to six months as it is believed to cause pimples, prickles, cold and allergic reactions. Most of the mothers (46.66%) avoided fish for eight months due to the reason that it leads to scaly structure of skin of the infants. Chicken (36.66%), mutton (30.00%) and egg (26.66%) were avoided for a period of eight months and were considered as heat producing foods (*barshana*). About 43.33 per cent of the subjects considered curds as a cold food, hence avoided for six months. Study conducted by Kaur *et al.* (2010) in Kurukshetra reported that frequency of consumption of non-vegetarian foods by the respondents was twice a week (41.17%), once a week (32.35%), fortnightly (12.35%) and monthly (14.11%).

The data presented in Table 6 depicts interesting results with regard to consumption of water. Mothers consumed less water when baby boy was born (2 teaspoons to 250 ml per day) compared to the birth of girl (1 to 4L per day). Generally either normal water (20 and 26.66%) or hot water (46.66 and 33.33%) was consumed by the mothers. Luke warm water was consumed by only 10 and 30 per cent of the mothers. Astonishingly 23.33 and 10.00 per cent of the respondents during the birth of girl and boy baby respectively, did not report giving plain water for drinking, instead gave water in the form of beverages like tea, coffee, milk and milk shakes or fruit juice. To prevent dehydration, to quench thirst and to rehydrate the body were the reasons quoted for consumption of water and prevent blotting of stomach, dilution of breast milk were the reasons quoted for reduced consumption or no consumption of water. In line with present study Joshi and Waghmare (2000) in Parbhani, Maharashtra reported avoidance of cold water by

Table 6. Type of water used for drinking during lactation N= 30

Type of water	Number (%)	Quantity	Reasons perceived by the respondents
Girl baby			
Normal water	6(20.00)	1 to 4L per day	To prevent blotting of stomach and enhance digestion
Luke warm water	3(10.00)		
Hot water	14(46.66)		
No plain water	7(23.33)		To prevent dilution of breast milk
Boy baby			
Normal water	8(26.66)	2 teaspoon to 250ml per day	To prevent blotting of stomach
Luke warm water	9(30.00)		
Hot water	10(33.33)		
No plain water	3(10.00)		To prevent dilution of breast milk

Note - Plain water was not given directly to the mothers instead, beverages like fruit juice, tea, coffee, milk and milk shakes were provided.

the lactating mother as it was considered acidic in nature, lead to cold and cough in the mother as well as infants.

Thus, it can be concluded from the present study that irrespective of income or family status traditional supplementary were given to the lactating mothers of during early part of lactation which are rich sources of micronutrients. It was observed that soft, easily digestible and energy dense foods were included in the diet of lactating women for a period of two weeks. Since, these are nutri-rich foods essentially required during lactation; there is an urgent need to educate young mothers to continue consumption of these foods.

References

- Dinu Kumari, 2015, Special foods given to promote lactation - a nutritional evaluation, *M.H.Sc. Thesis*, Univ. Agric. Sci. Dharwad, Karnataka, India.
- Joshi, M. and Waghmare, S., 2000, Dietary practices of lactating mothers residing in Parbhani district of Maharashtra. *Indian J. Nutr. Dietet.*, 39(2): 132-137.
- Kaur, T. J., Kochar, G. K. and Gupta, M., 2010, Knowledge, attitude and practices towards food intake by lactating mothers in Kurukshetra district. *Indian J. Nutr. Dietet.*, 47(12): 64-70.
- Kavitha, S. S., Sumayaa, S., Ravikumar, S. and Banu, T. A., 2013, A study on nutritional status of rural lactating mothers (0-6 months) in Ramanathapuram district. *Int. J. Pharm. Chem. Sci.*, 2(4): 1723-1724.
- Lancet, L., 2008, Factors affecting the initiation of breastfeeding: implications for breastfeeding promotion. *J. Nutr. Edu.*, 17(5): 183-221.
- Sangalad, A., 2011, Educational strategies to improve the nutritional status of pregnant women of Hubli rural and its outcome. *M.H.Sc. Thesis*, Univ. Agric. Sci. Dharwad, Karnataka, India.
- Shaikh, F. A., 2011, Feeding practices and nutritional status of infants and nursing mothers of muslim community from rural and urban areas of Dharwad. *M.H.Sc. Thesis*, Uni. Agric. Sci., Dharwad, Karnataka, India.
- Shubhangna, M. and Raj, 2004, Factors affecting infant feeding practices among women of Baijnath block of Himachal Pradesh. *J. Hum. Ecol.*, 16(1): 29-32.
- Winch, P., Ashraful, A. M., Akther, A., Afroz, D., Ashraf, A. N., Ellis, A. A., Baqui, A. H., Darmstadt, G. L., Arifeen, E. L. and Seraji, S., 2008, Local understanding vulnerability and protection during the neonatal period in Sylhet district of Bangladesh. *Indian J. Nutr. Dietet.*, 7(1): 231-236.