

# A Study on factors influencing the Nutritional Status of Lactating Women in Jammu, Kashmir and Ladakh Regions.

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## Abstract

The health of women is linked to their status in the society. The demographic consequence of the women has formed expression in various forms, such as female infanticide, higher death rate, lower sex ratio, low literacy level and lower level of employment of women in the non-agricultural sector as compared to men. Generally, at household level, cultural norms and practices and socio-economic factors determine the extent of nutritional status among women. For the purpose of present investigation, the data collected during 2005-06 on diet and nutritional status of tribal rural and urban lactating women respectively in States of Jammu and Kashmir was utilized. The study revealed inadequate dietary intake, especially micronutrient deficiency (hidden hunger) during lactation. Tribal women were particularly vulnerable to under nutrition compared to women in rural and urban areas. (16.9%) women had chronic energy deficiency, (56.4%) of women from all the three regions were observed to have clinical signs of nutritional deficiency, (30% )of women had taken deficient calories Clinical signs of deficiency of nutrition were uniformly distributed among three regions ( $p > 0.01$ ), whereas indicators like BMI and caloric intake showed significant difference ( $P < 0.01$ ) between the three regions . 49% studied women were found to be anemic.

**Keywords:**Foods. Micronutrients. Chronic Energy Deficiency. Urban, Rural. Tribal

## 1 INTRODUCTION

GOVERNMENT of India has been making several efforts in developing health and population policies. However, there are several problems in the implementation of appropriate interventions due to poverty, gender discrimination, illiteracy in the population (Buckshee 1997). According to 2001 census, only 54.3% of Indian women were literate. The literacy level of women can affect reproductive behavior,

use of contraceptives, health and upbringing of children, proper hygienic practices, access to employment and overall status of women in the society. An early marriage and child-birth is a major determinant of women's health and is also responsible for the prevailing wide variation in the socio-economic status. Inadequate and improper utilization of health facilities and wide spread anemia among all the reproductive age women, leading to high maternal mortality ,540

maternal deaths per one lakh live births. (NFHS 2). Poor health has repercussions not only for women but also their families. Women with poor health and nutrition are more likely to give birth to low weight infants. They are also less likely to be able to provide food and adequate care for their children. Finally, a woman's health affects the household economic well being, and as a woman with poor health will be less productive in the labour force. While malnutrition is prevalent among all segments of the population, poor nutrition among women begins in infancy and

continues throughout their lifetime. (Chatterjee 1990; Desai 1994). Because of prevailing culture and traditional practices in India, the health and nutritional status of women becoming worse affected. There is a paucity of information on diet and nutritional status of women including non-pregnant non-lactating (NPNL), pregnant and lactating women (less than 12 month of lactation). Therefore, an attempt was made to assess the diet and nutrition profile of lactating women in rural urban and tribal areas of Jammu and Kashmir State in India

## 2 MATERIALS AND METHODS

For the present study, random sampling was used. Sampling was done with probability proportional to size (PPS). Out of fourteen districts of Jammu and Kashmir only four districts were selected i.e. Srinagar, Jammu, Leh and Kargil. Two tehsils were selected from each district Srinagar and Jammu and one tehsil was selected from each Ladakh and Kargil. In this way six tehsils of selected districts were selected. The six tehsils selected for the present study are:-

Akhnoor, Jammu, Ganderbal, Srinagar, Leh and Kargil

The mothers were enrolled from randomly selected health institutions of tehsils obtained during primary selection of districts till the requisite number of sample was obtained. The instrument used for collecting data in this survey was questionnaire cum interview schedule. Information was collected regarding, Family Size, Family Type, Mother's Age, Mother's Occupation, Mother's Education, Mother's Access to Information, Parity, Place of Delivery, Type of Delivery & Socio Economic Status, Dwelling, family type, mother's age, mother's education, mother's occupation, parity,

socioeconomic status, type of delivery and place of delivery were taken as the independent variables effecting the nutritional status. Daily caloric intake, BMI and number of nutritional deficiency signs were taken as determinant of mother's nutritional status. Kuppswamy's SES scale was used to assess the socioeconomic status of the households (Sachchidananda 1994). Five to seven levels has been described in the original scale. They were modified and regrouped according to (Mishra D, Sing HP 2003) to have three levels upper, middle and lower.

Body Mass Index (BMI) of the mothers was calculated through their height in (meters) and weight in (kgs). A range from 18 kg/m<sup>2</sup> -24 kg/m<sup>2</sup> was used as normal, from 25-29.9 'overweight' and above 30 as 'obese'. A cutoff point for any chronic energy deficiency (CED), a BMI below 18 kg/m<sup>2</sup> was used. Clinical signs in respect of the Mother were assessed as given in WHO proforma [Pathak Arun, M.M. Gandotra, Baxi Ragendra, Shah Satish. (2002). Haemoglobin level was estimated by cyanmethaemoglobin method. [ [www.bloodindex.org](http://www.bloodindex.org)

## 3 STATISTICAL ANALYSIS

Statistical analysis was done through SPSS-10 software package for social sciences.

## 4 RESULTS

A compilation of the characteristics of mothers presented in Table (1) shows majority of mothers 36.6% belong to 25–30 years age group in the pooled sample. 32.7% mothers in younger age group i.e. < 25 years were seen in Jammu and in Ladakh. Maximum number of Kashmiri mothers 64.8% belonged to age group 25–30 years. Maximum illiteracy was seen in Ladakhi women 46.5% followed by Kashmiri women 35.7%. In terms of Occupation, majority of women 77.3% were housewives. The Maximum number of salaried women was seen in Kashmir as 23.6% followed closely by Ladakhi women 22.8%. Apart from them 7.3% of women were self employed working on own fields, rearing cattle or engaged in weaving. 79.9% had small family norms having only 1–2 small children followed by 18.6% of women who had large family norms with 3-4 children. The Maximum number of hospital deliveries were seen in Kashmir 76.8% followed by Jammu 62.4% whereas in Ladakh, maximum number of deliveries 62.4% had taken place in their own homes, assisted by traditional birth attendants (TBA's). Popular mass media (TV) could reach only 53.6% of the population of the areas surveyed. 60% mothers were exposed to TV in Jammu followed by 49.0% in Kashmir and 35.0% in Ladakh had access to TV. Comparatively more women from Kashmir 64% had access to radio while 50% from Jammu and only 48% from Ladakh had access to this mass medium. Over all, 25.2% mothers from the surveyed areas were not having access to any of the mass medium. Overall intake of

galactogogues was common in all the three regions with maximum number of women 77.5% taking for only 1–2 months. Only 4.9% women continued intake for more than four month. The indices of nutritional status of the mothers are presented in Table (2). Ironically 56.4% of women from all the three regions were observed to have clinical signs of nutritional deficiency. A greater number of signs of clinical deficiency (>4) were seen among 6.9% Ladakhi women, followed by Kashmiri women 2.5% and in Jammu only 1.9% women were having more than four deficiency signs. Combined to this, was another nutritional problem of low daily caloric consumption resulting in the lower BMI of 36.6% of Ladakhi women, 19.3% of Jammu women and 10% of Kashmiri women (BMI <18.5). 45.5% of Ladakhi women had lower caloric intakes followed by 41.3% of Jammu women who had taken deficient calories and 12.7% of Kashmiri women had deficient caloric intakes. Clinical signs of deficiency of nutrition were uniformly distributed among three regions ( $p > 0.01$ ), whereas indicators like BMI and caloric intake showed significant difference ( $P < 0.01$ ) between the three regions. Highest percentage of women having deficient caloric intakes were found to be illiterate and belonging to lower socio-economic status while least number of salaried mothers were found to consume deficient diets. Urban mothers had better caloric intake than rural mothers. Women having undergone LSCS or instrumental deliveries in hospitals were taking better diets than normally delivered mothers .

## 5 DISCUSSION

Women are generally vulnerable to undernutrition especially during pregnancy and lactation where the food and nutrient requirements are more during that period. The demographic consequences of the lower status in women has formed expression in various forms such as female infanticide, higher death rate for women compared to men, lower sex ratio, lower literacy rate in female, lower level of employment of women in the nonagricultural sector as

compared to men etc.(Srinivasan and Tara 1989). Most Indian mothers are malnutritional, anemic and have short pregnancy interval which could have been easily prevented. Women especially in younger age are at high obstetric risk (using the risk criteria of height less than 145 cm and weight less than 38 kg) (Saramma 1989).

Several studies serve underscores the relationship between maternal nutrition and

incidence of lowbirth weight (Agarwal 1984). The prevalence of micronutrient deficiencies - a study carried out by NNMB (2003) revealed that the overall prevalence of anaemia was observed to be highest among lactating women (78%) followed by pregnant Women (75%) and adolescent girls (70%). Generally, at household level, cultural norms and practices and socio-economic factors determines the extent of nutritional status. The high fertility of Indian women is one of the most detrimental socio-cultural influences on nutritional status because the metabolic stresses of pregnancy and lactation may not be adequately compensated by dietary intake before, during or even after these physiological processes. During pregnancy women is access to foods even more restricted in the traditional Indian household through taboos and ritual observances, which are widely documented in both rural and tribal population (Chatterjee 1989). Maternal education had a significant influence on nutritional status. Several studies indicated that malnutrition is a serious health concerns that Indian women face (Chatterjee 1990). It threatens their survival as well as that of their children. The negative effects of malnutrition among women are compounded by heavy work demands, by poverty, by child bearing and rearing and by special nutritional needs of women, resulting in increased susceptibility to illness and consequently higher morbidity. A recent study (Dharmalingam et al. 2009) indicated that the impact of Nutritional Status of mother is more pervasive than the impact of other factors on birth weight. The dietary intake of rural pregnant women was lower than the recommended level (Jood et al. 2002). The results of the present study revealed inadequate dietary intake, especially hidden hunger during lactation period among women. Tribal women were particularly vulnerable to undernutrition compared to their rural urban counterparts. Because of wide variation in culture, religion and levels of development among different regions in the state it is not surprising that women's health also varies greatly from region to

As many as 36.6% of mothers in Ladakh, 19.3% in Jammu and 10.0% in Kashmir were malnourished. These findings are in consonance with those of [National Family Health Survey; (NFHS-2) which had also revealed that nutritional deficiency is much higher in Jammu region than in the Kashmir region. It also showed that the proportion of women with BMI, of less than 18 is higher among scheduled caste and schedule tribe women, at 43.44 percent. The present study also shows 36.6% of Ladakhi women having BMI less than 18 which can be attributed to a poor dietary intake of the Ladakhi population. Although there was a significant difference in BMI in three regions, ( $p < 0.01$ ). The presence of clinical signs of nutritional deficiency among mothers could not reach any statistical significance. The results were in conformity with (Leela M S and Busi BR 1995). indicating that the women in state of Lactation are too burdened during which their body measurements showed lower values, the dietary intakes being only 50% adequate and the incidence of nutritional deficiency high as indicated by high mean nutritional deficiency scores. In the present study also there was nutritional problem of low caloric intakes among mothers from all the three regions as 45.5% of mothers from Ladakh had low caloric intakes followed by 41.3% of mothers from Jammu whereas Kashmir had 12.7% of mothers with deficient daily caloric intakes. Highest percentage of low BMI of Ladakhi woman can be attributed to the fact that they are heavily involved in agricultural activities which demands high caloric intake but ironically 45.5% of mother had low daily caloric intake despite of being in lactating state which further demands high calories. Lactational state generally is associated with an increased energy needs with a recommended 500 kcals increment in daily caloric intake. The volumes and composition of human milk among poorly nourished women is surprisingly good possibly due to some metabolic adaptations that results in qualitative modification with lower values of fat, water-soluble vitamins, vitamin-A, calcium and protein than in well nourished mothers. Poor intakes coupled with heavy strenuous and manual labor results in

disastrous consequences for the health status of the lactating mothers.

On the whole, eating the everyday food in larger quantities were common everywhere Gopalan C; (1958). showed an increase in volume of milk secreted from 420–540ml in poorly nourished Indian women following protein supplementation (from 61g/day to 99g/day). Similar results were obtained in western Nigeria by [Bassir O (1958). using a vegetable protein supplement (30g of Soya flour). [Meghraj M and Choudhary M. (2002). also found that

practice of consuming traditional supplementary foods duration was 40-45 days post partum. These foods were rich in fat and energy dense which contributed to the adequate intake of energy. However, once their intake was stopped the energy density of food came down. Special foods with galactogogues and high caloric intakes and protein intake need to be stressed amongst the lactating women of all the three regions, especially in Ladakh, whereas many as 36% of them were found to be malnourished.

## 6 CONCLUSION

The study concludes that highly significant differences exist between the three regions of Jammu, Kashmir and Ladakh with respect to socio demographic characteristics, feeding practices and nutritional and health status of the population. Lower and middle socio economic people made the most of population in all the three regions. The study highlights the need for necessary steps

for more community participation in various developmental programmes for removal of poverty and improve literacy rate among females. Health and Nutrition Education has to be strengthened through department of health and ICDS, to bring awareness and behavioral change for better health and nutrition practices to improve the nutritional status of mother and child.

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**Table 1- Characteristics of Lactating Women**

		<b>Jammu</b>	<b>Kashmir</b>	<b>Ladakh</b>	<b>Total</b>
Age	< 25	249 (36.6)	100 (19.5)	33 (32.7)	382 (29.5)
	25 to 30	379 (55.7)	332 (64.8)	53 (52.5)	764 (59.1)
	> 30	27 (4.0)	46 (9.0)	9 (8.9)	82 (6.3)
Occupation	House wife	586 (86.2)	348 (68.0)	65 (64.4)	999 (77.3)
	Self Employed	37 (5.4)	43 (8.4)	13 (12.9)	93 (7.3)
	Salaried	57 (8.4)	121 (23.6)	23 (22.8)	201 (15.5)
Literacy Status	Illiterate	148 (21.8)	183 (35.7)	47 (46.5)	378 (29.2)
	Primarily Literate	168 (24.7)	81 (15.8)	14 (13.9)	263 (20.3)
	Secondary Literate	245 (36.0)	144 (28.1)	33 (32.7)	422 (32.6)
	Higher Education **	119 (17.5)	104(20.3)	7 (6.9)	230 (17.8)
Parity	1 to 2	551 (81.0)	393 (76.8)	89 (88.1)	1033 (79.9)
	3 to 4	124 (18.2)	107 (20.9)	10 (9.9)	241 (18.6)
	>4	5 (.7)	12 (2.3)	2 (2.0)	19 (1.5)
Place of delivery	Hospital	424 (62.4)	393 (76.8)	38 (37.6)	855(66.1)
	Home	256 (37.6)	119 (23.2)	63 (62.4)	438(33.9)
Type of Delivery	Normal	392 (57.6)	131(25.6)	78 (77.2)	601 (46.5)
	LSCS	164 (24.1)	260 (50.8)	10 (9.9)	434 (33.6)
	Instrumental	124 (18.2)	121(23.6)	13 (12.9)	258 (20.0)
Duration of intake of Galactogogues (Mothers)	1 to 2	372 (78.8)	218 (81.3)	9 (27.3)	599 (77.5)
	3 to 4	66 (14.0)	46 (17.2)	24 (72.7)	136 (17.6)
	> or = 5	34 (7.2)	4 (1.5)		38 (4.9)
Access to Information	Television	408 (60.0)	250 (49.0)	35 (35.0)	694 (53.6)
	Radio	340 (50.0)	328 (64.0)	48 (48.0)	716 (55.3)
	Magazines /Newspapers	105 (17.0)	51 (10.0)	4 (3.5)	160 (12.3)
	Nil	163 (24.0)	128 (25.0)	35 (35.0)	326 (25.2)

*Note: Figures in parenthesis represents percentage*

*Commonly taken galactogogues.*

*Jammu: Cereals, Pulses, Fruits and Milk.*

*Kashmir: Mutton, Fish, Dry fruit ,Garden cress and Milk*

*Ladakh: Barley cereal, vegetables, meat, chang, butter and salt tea*

**Table 2 – Nutritional status of Lactating Women.**

Indices of Nutritional Status		Name of the Place			Total
		Jammu	Kashmir	Ladakh	Total
Body Mass Index	CED*	131 (19.3)	51 (10.0%)	37 (36.6%)	219 (16.9)
	Normal	449 (66.0)	387 (75.6%)	56 (55.4%)	892 (69.0)
	Over Weight	100 (14.7)	74 (14.4)	8 (8.0)	182 (14.1)
		Chi square.727 (.000)**			
Severity of CED	< or = 10%	115 (87.8)	44 (86.3%)	26 (70.3%)	185 (84.5)
	10 to 20%	14 (10.7)	6 (11.8%)	11 (29.7%)	31 (14.2)
	20 to 30%	2 (1.5)	1 (2.0%)	--	3 (1.4)
		Chi square 36.486 (.039)*			
Caloric Intake	Deficient	281 (41.3)	65 (12.7%)	46 (45.5%)	392 (30.3)
	Normal	360 (52.9)	420 (82.0%)	51 (50.5%)	831 (64.3)
	Excess	39 (5.7)	27 (5.3%)	4 (4.0%)	70(5.4)
		Chi square 99.769 (.000)**			
Clinical Signs of Nutritional Deficiency	1 to 2	217 (31.9)	178 (34.8%)	37 (36.6%)	432 (33.4)
	3 to 4	141 (20.7)	96 (18.8%)	27 (26.7%)	264 (20.4)
	> 4	13 (1.9)	13 (2.5%)	7 (6.9 %)	33 (2.6)
	Normal	309 (45.4)	225 (43.9%)	30 (29.7%)	564 (43.6)
		Chi square 4.631 (.099)ns			

**Note: Figures in parenthesis represents percentage**

**\* CED: Chronic Energy Deficiency**



### Overall Caloric Intake of Mother across Influencing Factors



