

Nutritional Status of Scheduled Caste Pre-School Children : A Case Study in District Kangra of Himachal Pradesh

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KEY WORDS Family. Nutrition. Education. Scheduled Caste. Himalayas.

ABSTRACT The present study was undertaken among 45 Scheduled Caste families having 75 pre-school children (upto 5 years age) in district Kangra of Himachal Pradesh. In majority of these families the per capita income was much below the per capita income of the state and 60-80 per cent of their total annual income was spent on food. The calorie and protein intake in pre-school children were less than the recommended allowances. The male children were getting more protein and calories as compared to female children. Mother's education, type of family and family occupation have some influence on calorie intake of these children. Children suffering from diarrhoea were maximum in the age group of 0-1 year. Among the rearing practices, faulty practices like feeding the child on 3rd day after removing the colostrum, starting solid food at an age of one year were commonly seen.

INTRODUCTION

In India 80 per cent of the population resides in the villages. Of the total population, about 50 per cent is still under the poverty line which includes majority of the Scheduled Caste families. Poverty is an important limiting factor for buying enough food leading to malnutrition and stunted growth. Majority of the children are not in position to get adequate nourishment because of very low per capita income of their families. The most vulnerable section is below the age five who constitute about 20 per cent of the population. Malnutrition is commonly attributed to poverty, but this widespread ignorance about the essentials of child care, faulty food habits, unequal distribution of food and income, and rapid population growth do play an important role. Although attempts have been made to investigate the nutritional status of pre-school children in Himachal Pradesh (Sujata, 1986; Devi, 1988), little attention has been paid to-

wards the children of Scheduled Caste families. Thus the present study has been conducted with the following objectives :

- to study the socio-economic characteristics of the sampled families.
- to compare the existing nutritional status of pre-school children with the recommended allowances.

MATERIAL AND METHODS

This study was carried out in five selected villages of district Kangra namely Arla, Balla, Ghaneta, Gugga and Farehar. A sample of 45 Scheduled Caste families having at least one pre-school child was randomly selected. From these families, 75 pre-school children *i.e.* 38 male and 37 female were selected for recording the observations. Thus, there were 18, 21, 16 and 20 children of 1-2, 2-3, 3-4 and 4-5 years of age group, respectively.

Besides this, a sample of 10 children comprising of 5 male and 5 female of less than one year age was also screened for recording some of the informations pertaining specifically to this age group. Observations were also obtained from 15 pregnant women regarding precautions to be taken during this stage.

A pre-tested questionnaire containing information on family background (family size, education of parents, family income, family type and its occupation), expenditure pattern on food items, dietary intake of children (1 to 5 years) and diarrhoeal incidents was used for collecting the data. Besides this, questionnaire also included information pertaining to the practices for care of mothers during pregnancy and rearing of infants. Data were collected by hav-

ing personal discussion with the respective sampled housewives.

To examine the nutritional status of pre-school children, diet intake was calculated in terms of calories and protein and was then compared with recommended dietary intake of nutrients given by Indian Council of Medical Research (1990).

Adequacy ratio was worked out by the following formula:

$$\text{Adequacy ratio} = \frac{\text{Total intake of nutrients}}{\text{Recommended daily allowances}}$$

RESULTS AND DISCUSSION

Kangra district is divided into twelve blocks. Bhawarna block falls in Palampur Tehsil and the selected villages are about 7-14 kms distance from the University Campus (Palampur). The main characteristics of sampled families are depicted in table 1.

Table 1 : Main characteristics of sampled families

A. Household Characteristics	
Average household size	= 6.5
Average education of father (years)	= 4.2
Average education of mother (years)	= 1.7
Annual per capita income (Rs.)	= 1633.7
Per cent number of nuclear families	= 66.8
Per cent number of joint families	= 33.3
B. Occupation of Main Income Earner (%)	
Family with agriculture as main occupation	= 49.3
Family with labour as main occupation	= 45.4
Family with service as main occupation	= 5.3

(i) *Family Characteristics* : The average size of the family was 6.5 with per capita income of Rs. 1633.7 per annum. Thus the sampled families had 66.5 per cent less income as compared to State's per capita income (Anonymous, 1992). Average education of the mother was too low as compared to average education of the father *i.e.* 1.7 as against 4.2 years. Majority of the families were of nuclear type *i.e.* 66.8 per cent. Main source of income of sampled families was agriculture (49.3%) and labour (45.4%).

(ii) *Distribution of Families According to Income Group* : Table 2 depicts the distribution of sampled families according to their annual

Table 2 : Distribution of sampled families according to annual per capita income

Annual per capita income group (Rs)	Number of families N=45	Number of children N=75
Below 1,000	9(20.00)	13 (17.33)
1,001 - 2,000	21 (48.66)	36 (48.00)
2,001 - 3,000	10(22.33)	19(25.34)
Above 3,000	5(11.11)	7(9.33)

per capita income. Majority of the sampled families (66.6 per cent) were in the category of low income group having an annual per capita income below Rs. 2000. Only 11.11 per cent families had annual per capita income more than Rs. 3,000.

(iii) *Expenditure Pattern* : The data on expenditure of sampled households revealed that out of total income, highest expenditure was incurred on food by each income group *i.e.* below 1,000 (80%), 1,001-2,000 (70.1%), 2,001-3,000 (65.3%) and above 3,000 (59.8%). It was observed that with the increase in income the expenditure on food decreased. The next two major items of expenditure in these families were clothing and health.

(iv) *Precautions During Pregnancy* : It was observed that during pregnancy, women were not taking any extra diet. Besides this, they had kept on working in home and field even upto the stages of pregnancy. Majority of pregnant women *i.e.* 78.2% had never gone to health centres for check up, and the rest, 21.8% had visited the health centres only at the time of any complications, and only the latter women get vaccinated against tetanus.

(v) *Care Practices of Children upto One year of Age* : While investigating the care practices of infants, study revealed that newly born child was fed mother's milk for the first time on 3rd day of his birth. This was practiced by all the respondents. During first two days, infant was nourished with 1-2 spoons of cow's milk and honey. Colostrum was reported to be discard-

ed by all the mothers as it was not considered fit for feeding. Supplementary feeding was started at an early stage of one year by 64.5% mothers which included rice, *dal* and *chapati*. Special food was prepared for children only by well-to-do families.

(v) *Nutritional Status*: The data on the average intake of calories and protein from the sampled pre-school children revealed that all the children were under-nourished with respect to calories and protein (Table 3). The calories intake of one year old male and female children was 825.5 and 793.3 Kcal, respectively as compared to recommended dietary allowances of 1240 Kcal. The male children were taking more calories as compared to female children. The similar trend of calorie intake was visible in other age groups. The respective adequacy ratios in males for 1-2, 2-3, 3-4 and 4-5 year age groups were 0.67, 0.75, 0.61 and 0.73, respectively. An identical trend in the adequacy ratio of female children was observed.

Protein consumption among different age groups was also alarmingly low (Table 3). The

probably due to relatively high cost of protein rich foods which do not seem to be within the buying limits of these Scheduled Caste families.

(vii) *Effect of Income on Intake of Nutrients*: Table 4 reveals the effect of income on intake of nutrients among sampled children. It was observed that calorie and protein intake was alarmingly low upto Rs. 2,000 per capita income for both male and female children. But with increase in per capita income there was a slight improvement in protein and calorie intake though it was less than the recommended amounts which is in concurrence with other studies (Sujata, 1986; Devdas, 1980). In the present study, it is significant to note that protein and calorie malnutrition go together as reported by other workers also (Sujata, 1986; Sukhatme, 1974).

Table 5 shows the impact of mother's education, family type and family's main occupation on calorie intake by the selected children. The children belonging to illiterate mothers were receiving less calories as compared to

Table 3 : Level of recommended and average intake of calories and protein among different age groups of children

Age groups (in years)	Nutrients	Recommended daily allowance	Children			
			Male		Female	
			Average intake	Adequacy ratio	Average intake	Adequacy ratio
1-2	Calories (Kcal)	1240	825.50	0.67	793.28	0.64
	Protein (g)	22	14.27	0.65	13.20	0.60
2-3	Calories (Kcal)	1240	933.69	0.75	857.31	0.69
	Protein (g)	22	14.83	0.67	14.08	0.64
3-4	Calories (Kcal)	1690	1008.48	0.61	980.51	0.58
	Protein (g)	30	18.43	0.61	17.92	0.60
4-5	Calories (Kcal)	1690	1240.28	0.73	1068.57	0.63
	Protein (g)	30	20.08	0.67	18.10	0.60

results revealed that protein consumption of one year old male and female children was 14.27 and 13.20 g against 22.0 g recommended daily allowances. In other age groups, *i.e.* 2-3, 3-4 and 4-5 years protein consumption was also low. It could be further seen that calories intake protein intake was also high among male children as compared to female children. These results indicate that the less protein intake is

children belonging to educated mothers. This pattern was observed in almost all the age groups. The type of family in which a child is being developed, does have some impact on the calorie intake. The children growing in nuclear families were getting comparatively higher calories as compared to the children growing in joint families. This is probably due to the fact that mothers in nuclear families are relatively

Table 4: Daily nutrient intake of sampled children according to the per capita income groups

Per capita income groups	Male		Female	
	Calories	Protein	Calories	Protein
Below 1,000	965.15	16.32	823.57	15.59
1,000-2,000	979.53	16.8	940.78	15.97
2,000-3,000	1030.29	17.21	962.10	16.93
Above 3,000	1150.50	17.92	1048.98	17.34

Table 5: Effect of selected family characteristics and income level on the calorie intake of sampled children

Family characteristics	Below 1000	1001-2000	2001-3000	Above 3000
Mother's Education				
Illiterate (N=52)	932.13	948.63	982.00	-
Primary (N=18)	950.56	971.37	993.24	1076.43
Middle (N=5)	951.31	-	1002.68	1120.57
Family Type				
Nuclear	952.85	979.36	1004.60	1123.71
Joint	893.15	942.64	995.40	1096.29
Occupation				
Agriculture (N=37)	938.02	943.33	-	-
Labour (N=34)	948.98	956.27	980.75	1072.79
Service (N=4)	-	980.40	1000.25	1121.21

more liberal in feeding their children according to their desire. Further, occupation of the family was also found to be influencing the calories intake of the child.

(viii) *Prevalence of Diarrhoea*: Table 6 shows the prevalence of diarrhoeal incidence among pre-school children. Ninety per cent of 0-1 year age group had diarrhoeal attack(s). But with the increase in age, the prevalence of diarrhoea decreased. The major reason for diarrhoea among pre-school children was unhygienic conditions prevailing in these families.

CONCLUSION

Majority of the Scheduled Caste families are

Table 6: Children suffering from diarrhoea during one year in different age groups

Age groups (in years)	Children suffering from diarrhoea	
	Number	Percentage
0-1 (N=10)	9	90.00
1-2 (N=18)	15	83.30
2-3 (N=21)	16	76.20
3-4 (N=16)	12	75.00
4-5 (N=20)	11	55.00

much below the per capita income of the state. The protein and calorie intake among the pre-school children of these families are alarmingly low. The factors like mother's education, family type and family occupation do have some impact on the calorie intake of the pre-school children.

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