

Training Needs of Rural Mothers in Nutrition, Health and Environmental Sanitation in Different Agro-climatic Regions of Punjab

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Malnutrition is a social problem of staggering dimensions in South Asia. Protein energy malnutrition among South Asian children has not improved significantly during the last two decades, inspite of large investments in nutrition programmes. Thus, there is a need to adopt a holistic approach for the prevention of malnutrition. Mother's health knowledge alone appeared to be crucial skill for raising child health in developing countries (Glewwe, 1997). The studies have also reported that nutrition knowledge level of the mothers significantly affects the nutritional status of children (Chandna and Sehgal, 1995). Therefore, it is utmost necessary to identify various nutritional training needs on the basis of existing gaps in knowledge of the mothers so that a realistic and action oriented nutrition education training programme with more emphasis on areas of inadequate knowledge may be organised for them. About 70 per cent of Punjab population reside in villages. Keeping in view, all these considerations, the present study was an attempt in this direction. The specific objective of the study was to measure the knowledge level of rural mothers of preschool children and to identify and prioritize the various training needs in different regions of Punjab.

MATERIAL AND METHODS

Based on the agro-climatic parameters (ARPU, 1998), the state of Punjab has been subdivided into three regions (Fig. 1) viz. the sub-mountain region (RI), the central plain region (RII) and the south-western region (RIII). Two districts from each region were selected keeping in view the functioning of Krishi Vigyan Kendra's of Punjab Agricultural University, Ludhiana. The selected districts were Hoshiarpur and Nawan-shahr representing Region-I, Kapurthala and Patiala from Region-II and Bathinda and Faridkot

representing Region-III. The multistage sampling technique was adopted to select sample respondents. In the first stage, two blocks from each district were chosen randomly. In the second stage, two villages were randomly selected from each selected block. The final stage involved the selection of 50 mothers having 1 preschool child of 1-3 years of age from the selected villages in each region. Thus, a sample of 150 mothers spreading over 24 villages, 12 blocks, 6 districts and 3 agroclimatic regions were selected.

The knowledge level of the mothers regarding nutrition, health and environmental sanitation was assessed by adopting a standard test and schedule developed purposively for the study. Six basic areas i.e. general nutrition, nutrition during pregnancy and lactation, feeding practices, diarrhoea and its management, nutritional deficiency disorders and health and environmental sanitation served as the frame-work for the test. Based on the relevancy and appropriateness to measure, a total 66 items constituted the knowledge test. The knowledge scores of the mother was the summation of correctly answered items and the possible score range was 0-138. Training need scores (TNS) were worked out by using formula : $100 - \text{knowledge score} (\%)$. The results were statistically tested using t-test and correlation coefficients.

RESULTS AND DISCUSSION

Socio-economic and Demographic Information

The information (Table 1) revealed that 39, 34 and 27 per cent of rural mothers belonged to high, middle and low caste respectively. The maximum mothers i.e. 32 per cent belonged to medium income group and 21 per cent belonged to very low income group (Fig. 2). Majority of the mothers were between 25-31 years of age and 21 per cent were illiterate. The literacy rate of mothers was



Fig. 1 Agro-climatic regions of Punjab

found to be higher in RI as compared to RII and RIII. Regarding employment status, the data brought out that majority of mothers (81%) were housewives while 19 per cent were working mothers. Seventy five per cent of working mothers belonged to labour class. Sixty five per cent of mothers were having exposure to mass media. Majority of the mothers in all the regions

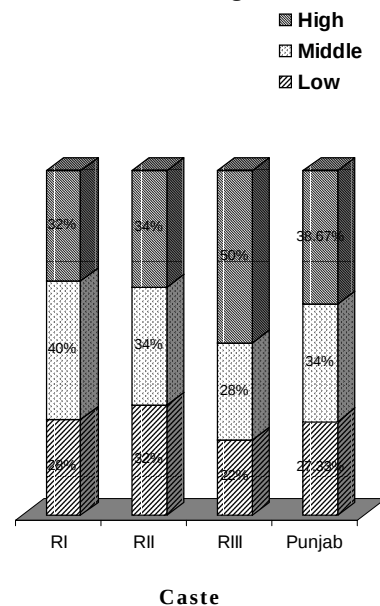
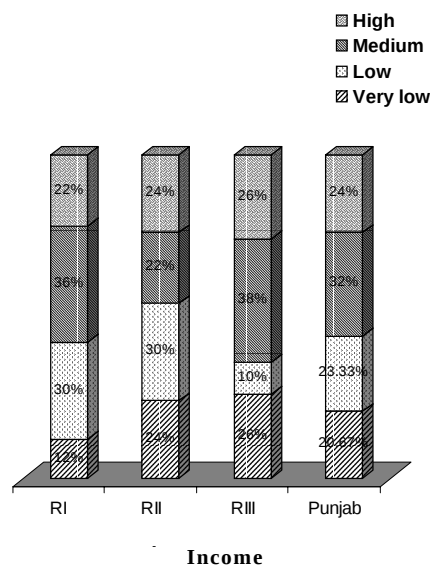
were not frequent visitor to city.

Knowledge Level of Mothers

Analyzing the various areas of knowledge (Table 2), it was found that the mean knowledge as percentage of maximum obtainable scores in general nutrition varied from 25-37, nutrition during pregnancy and lactation from 20-31, feeding practices from 35-52, diarrhoea and its management from 23-34, nutritional deficiency disorders from 10-16 and in the area of health and environmental sanitation from 31-47 among the mothers belonging to different regions of Punjab. The mothers of RI had significantly ($P \leq 0.05$) higher knowledge (34%) in all the areas as compared to RII (23%) and RIII (24%). The higher knowledge level of mothers in RI could be attributed to higher literacy level. On the whole the knowledge level of mothers with regard to various areas of nutrition, health and environmental sanitation in Punjab ranged between 12-43 per cent with an average of 27 per cent.

Distribution of Mothers According to their Knowledge Level

The results further brought out that on the



Region = RI – Sub mountain; RII – Central plains; RIII – South western

Fig. 2. Socio-economic characteristics of selected rural mothers

Table 1: Socio-economic and demographic information of selected rural mothers in different region of Punjab

Characteristics	Region						Punjab	
	RI		RII		RIII			
<i>Caste</i>								
Low	14	(28.00)	16	(32.00)	11	(22.00)	41	(27.33)
Middle	20	(40.00)	17	(34.00)	14	(28.00)	51	(34.00)
High	16	(32.00)	17	(34.00)	25	(50.00)	58	(38.67)
<i>Income group</i>								
Very low (landless)	6	(12.00)	12	(24.00)	13	(26.00)	31	(20.67)
Low (0-5 acres)	15	(30.00)	15	(30.00)	5	(10.00)	35	(23.33)
Medium (5-10 acres)	18	(36.00)	11	(22.00)	19	(38.00)	48	(32.00)
High (>10 acres)	11	(22.00)	12	(24.00)	13	(26.00)	36	(24.00)
<i>Age (years)</i>								
18 - 24	15	(30.00)	13	(26.00)	28	(56.00)	56	(37.33)
25 - 31	23	(46.00)	30	(60.00)	21	(42.00)	74	(49.33)
32 - 38	12	(24.00)	7	(14.00)	1	(2.00)	20	(13.33)
Mean±S.E.	27.58±4.64		26.38±4.01	24.74±3.03	26.23±4.12			
<i>Education</i>								
Illiterate	1	(2.00)	17	(34.00)	14	(28.00)	32	(21.33)
Primary to middle	23	(46.00)	13	(26.00)	20	(40.00)	56	(37.33)
High school	23	(46.00)	20	(40.00)	16	(32.00)	59	(39.34)
Graduate to PG	3	(6.00)	-	-	-	-	3	(2.00)
Mean±S.E.	8.54±2.96		5.76±4.64	5.68±4.13	6.66±4.19			
<i>Employment status</i>								
Non-working	40	(80.00)	39	(78.00)	43	(86.00)	122	(81.33)
Working	10	(20.00)	11	(22.00)	7	(14.00)	28	(18.67)
<i>Mass Media Exposure</i>								
Yes	37	(74.00)	36	(72.00)	24	(48.00)	97	(64.67)
No	13	(26.00)	14	(28.00)	26	(52.00)	53	(35.33)
<i>Urban contact</i>								
Daily	3	(6.00)	4	(8.00)	2	(4.00)	9	(6.00)
Weekly	5	(10.00)	6	(12.00)	4	(8.00)	15	(10.00)
Fortnightly	10	(20.00)	9	(18.00)	7	(14.00)	26	(17.33)
> monthly and above	32	(64.00)	31	(62.00)	37	(74.00)	100	(66.67)

Figures in parentheses indicate percentages.

Region = RI – Sub mountain; RII – Central plains; RIII – South western

whole the majority of rural mothers (71%) had low level of knowledge followed by mothers (25%) having medium level of knowledge (Table 3 and Fig. 3). Negligible number of mothers (4%) had high level of knowledge. The findings of the present study are in accordance with those of Kaur and Sehgal (1996) which indicated that more than 90 per cent of rural women of Hisar district had inadequate knowledge, 7 per cent were moderately informed and only 2 per cent possessed adequate knowledge about various nutrition practices.

Prioritization of Training Needs

On perusal of data (Table 4), it was found

that in the area of nutritional deficiency disorders, the training need scores of mothers in all the regions were highest (RI = 83.74, RII = 89.94 and RIII = 89.74) and thus was ranked as first in training for all the regions. According to training need scores, the areas of nutrition during pregnancy and lactation, diarrhoea and its management and general nutrition were ranked as second, third and fourth respectively for priority in training in all the regions of Punjab. The least training need scores of mothers of RI and RII were observed in the area of feeding and practices (RI = 47.56 and RII=60.00). Whereas these scores of mothers of RIII were found least in the area of health and environmental sanitation (RII = 63.93) which required least emphasis for

Table 2: Mean scores of knowledge of selected rural mothers regarding nutrition, health and environmental sanitation in different regions of Punjab.

Areas of knowledge	Maximum obtainable scores	Region		Punjab	t-value		II vs III
		RI	RII		I vs II	I vs III	
General nutrition	28	10.36±5.31 (37.00)	8.28±4.30 (29.57)	8.55±5.17 (30.54)	2.15**	3.15***	1.32 ^{NS}
Nutrition during pregnancy and lactation	26	8.18±6.12 (31.46)	4.28±4.12 (16.46)	5.87±5.25 (22.58)	3.72***	2.82***	0.99 ^{NS}
Feeding practices	9	4.72±1.77 (52.44)	3.60±1.85 (40.00)	3.83±2.13 (42.56)	3.09***	3.68***	1.02 ^{NS}
Diarrhoea and its management	15	5.04±3.32 (33.60)	3.88±3.04 (25.87)	4.11±3.12 (27.40)	1.82*	2.56**	0.76 ^{NS}
Nutritional deficiency disorders	31	5.04±5.07 (16.25)	3.12±2.83 (10.06)	3.78±4.03 (12.19)	2.33**	2.32**	0.11 ^{NS}
Health and environmental sanitation	29	13.56±5.66 (46.76)	9.04±5.23 (31.17)	11.02±5.70 (38.00)	4.15***	2.82**	1.34 ^{NS}
Overall knowledge	138	47.00±25.01 (34.06)	32.20±18.81 (23.33)	37.25±22.61 (26.99)	3.34***	3.15***	0.09 ^{NS}

Values represent mean±S.E. Figures in parentheses indicate percentages.
 *** significant at 1%, ** significant at 5%, * significant at 10%, NS - non significant
 Region = RI - Sub mountain; RII - Central plains; RIII - South western

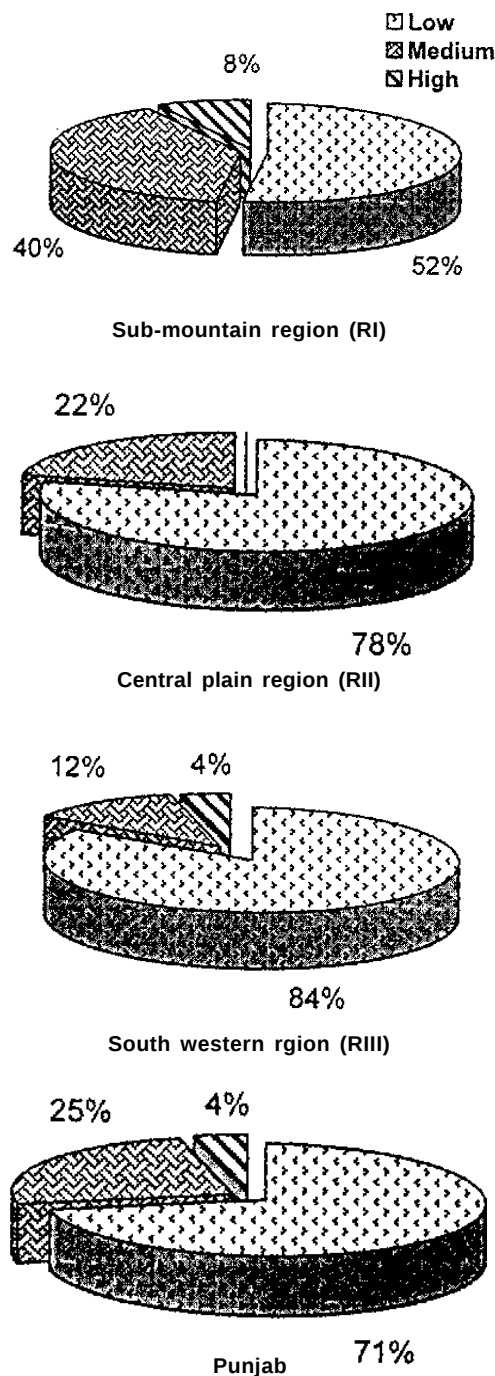


Fig. 3. Distribution of selected rural mothers according to their knowledge level.

Table 3: Distribution of selected rural mothers according to their knowledge level regarding nutrition, health and environmental sanitation in different regions of Punjab.

Level of knowledge	Scores	Region						Punjab	
		RI		RII		RIII			
Low	0 - 46	26	(52.00)	39	(78.00)	42	(84.00)	107	(71.33)
Medium	47 - 92	20	(40.00)	11	(22.00)	6	(12.00)	37	(24.67)
High	93 - 138	4	(8.00)	-	-	2	(4.00)	6	(4.00)

Figures in parentheses indicate percentages.

Region = RI – Sub mountain; RII – Central plains; RIII – South western

Table 4: Prioritization of areas of knowledge regarding nutrition, health and environmental sanitation in different regions of Punjab.

Areas of knowledge	Region						Punjab	
	RI		RII		RIII		TNS	Rank
	TNS*	Rank	TNS	Rank	TNS	Rank		
General nutrition	63.00	IV	70.43	IV	75.00	IV	69.46	IV
Nutrition during pregnancy and lactation	68.54	II	83.54	II	80.23	II	77.42	II
Feeding practices	47.56	VI	60.00	VI	64.89	V	57.44	VI
Diarrohea and its management	66.40	III	74.13	III	77.20	III	72.60	III
Nutritional deficiency disorders	83.74	I	89.94	I	89.74	I	87.81	I
Health and environmental sanitation	53.24	V	68.83	V	63.93	VI	62.00	V
Overall knowledge	65.94		76.67		76.42		73.01	

Figures in parentheses indicate percentages.

* Training need scores

Region = RI – Sub mountain; RII – Central plains; RII – South western

training in respective the regions.

On the whole, the training need scores of mothers in Punjab was highest (87.81) in the area of nutritional deficiency disorders and thus implying top priority for training. This was followed by the area of nutrition during pregnancy and lactation (77.42), which was ranked as second. The lowest mean training need scores were observed in feeding practices (57.44) which required least emphasis for training in the state of Punjab.

Relationship between Socio-economic and Demographic Variables and Knowledge Level of Mothers

It was found that education of mother was significantly and positively correlated ($r=0.37$) with their knowledge regarding nutrition, health and environmental sanitation as indicated in Table 5. Rani and Rao (1995) reported the similar association between these variables. Such relationship suggested that the formal schooling enables the mother to learn and acquire knowledge of

nutrition, health and environmental sanitation. The negative correlation emerged between employment and knowledge level of mothers indicated that non-working mothers were knowledgeable than working mothers as they have more time to learn through formal or informal contacts. A positive significant correlation of knowledge level of mothers with mass media exposure ($r=0.48$) and urban contact ($r=0.21$) revealed that information and communication

Table 5: Correlation coefficients between socio-economic/demographic variables and knowledge level of mothers: Punjab.

Socio-economic / demographic variables	Knowledge level of mothers
Age of mother	0.13 ^{NS}
Education of mother	0.37***
Employment status of mother	-0.23**
Mass media exposure of mother	0.48***
Urban contact of mother	0.21**
Caste	0.19**
Land holding	0.22**

*** significant at 1% level

** significant at 5% level

NS - Non significant

facilities enabled the mother to learn better and acquire more knowledge. The results (Table 5) further highlighted that caste and landholding were positively and significantly correlated with the knowledge level of mothers. This suggested that social/economic status has a strong bearing on knowledge level of rural mothers regarding nutrition, health and environmental sanitation in Punjab.

CONCLUSION

The analysis highlighted the poor and inadequate knowledge level of rural mothers belonging to different agro-climatic regions of Punjab in all the areas of nutrition, health and environmental sanitation. Thus, there is a need to impart training and education to upgrade their knowledge and hence the nutritional and health status of children. The area of nutritional deficiency disorders need to be accorded a top priority for imparting training followed by nutrition during pregnancy and lactation, diarrhoea and its management, general nutrition, health and environmental sanitation and feeding practices. The study further emphasized to develop training strategies for the mothers engaged in farm activities. Also to make special efforts to involve adolescent girls (would be mothers) and particularly the mothers of preschool children in various maternal and child health related training programmes. Further, a similar type of study may be conducted in other states of country to identify the need based trainings to improve the health, hygiene and nutritional status of mothers and ultimately their children.

KEYWORDS Knowledge level; rural mothers; regions; training need scores; prioritization.

ABSTRACT A total 150 mothers of preschool children from 24 villages of 6 representative districts of 3 agro-climatic regions of Punjab were selected for the present study. The knowledge level of rural mothers with regard

to various areas of nutrition, health and environmental sanitation in Punjab ranged between 12-43 per cent with an average of 27 per cent. The mothers of sub-mountain region had significantly ($P \leq 0.05$) higher knowledge in all the areas as compared to central plain and south western region. Majority of rural mothers (71%) had low level of knowledge followed by mothers (25%) having medium level of knowledge and merely 4 per cent of mothers had high level of knowledge. On the basis of training need scores, the areas of nutritional deficiency disorders, nutrition during pregnancy and lactation, diarrhoea and its management and general nutrition in all the regions of the state were ranked as first, second, third and fourth respectively. The areas of health and environmental sanitation and feeding practices were ranked as fifth and sixth in the sub-mountain and central plain region. Whereas, these areas were ranked as sixth and fifth in south western region of Punjab. Further, the knowledge level of mothers indicated a positive and significant correlation with their education, mass media exposure, urban contact, caste and land holding while a negative and significant correlation with their employment status. The findings emphasized the need for nutrition and health education interventions to upgrade the knowledge level of rural mothers and hence the nutritional and health status of their children.

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